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WHO SHOULD GO TO COLLEGE?

AN ECONOMICAL LANGUAGE LABORATORY

OPENING A NEW JUNIOR HIGH SCHOOL

A SYMPOSIUM ON

THE CONSTRUCTIVE USE OF TEACHERS' TALENTS

SYMPOSIUM NEXT MONTH

THE LIBRARY IN THE MODERN SECONDARY SCHOOL

—Theme for the Year—

IMPROVING CONDITIONS FOR LEARNING

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EDITORIAL

THE TEAM TEACHING BANDWAGON

You are out of fashion this season if you have no "experiment" in team teaching or similar type of project. The number of schools reporting that they are experimenting with classes of variable size, flexible schedules, and team teaching appears to be large. Promising as these innovations may be, is there a danger? A word of caution may be in order.

When one inquires into the detail of these efforts, a substantial number appear to be cut from the same bolt of cloth: two or three classes, often of superior students, in a particular subject, have been scheduled at the same period. They make liberal use of the lecture method of instruction, with one or another of the teachers making presentations to large combined classes several times per week. On other days the classes meet with their regular teacher in normal-sized groups. Sometimes the team includes an older, more experienced teacher matched with one or more new and inexperienced teachers. A part-time secretary or clerical aide may be assigned to check the roll, prepare tests, outlines, and other instructional materials. The amount of small-group work and independent study is referred to as "one of those parts of the program which we have not yet been able to work out." The design and the plan for evaluating the results of these new ventures are frequently sketchy, and at times not even present.

Several elements in this situation disturb us. Entry into the type of innovation represented by team teaching can be made quite readily, even hastily, without upsetting the school very much. The prospects of saving money and more fully using building space is alluring. Hence, a school can report that it is in the vanguard of educational progress without too much inconvenience. The amount of care and thought which ought properly to be expended in embarking upon a new educational procedure is often lacking. There may be danger of a superficial effort in an attempt to "get in on this idea since everyone else seems to be doing so." We are especially concerned to hear altogether too frequently, in a rather punitive tone, that this experience will ready pupils for college. There is lurking below the surface an attitude of pre-college hazing, getting students ready for the rigors of college education, while at the same time perhaps saving some money and relieving an overcrowded building. It is reasoned that since students in college must sit in large lecture classes, taking notes and getting what they can, we might well replicate this situation in high school

to see how pupils respond. The educational desirability of a large class-lecture type of procedures is not defended or advocated as being desirable.

The possibilities of team teaching are great. But altogether too seldom do we find differentiated teaching assignments according to the teachers' talents, liberal provision for independent study, individual conferences, and small-group discussions, and release of substantial time for planning and preparation by teachers.

These imaginative possibilities should not be overlooked or undervalued if the educational potential of team teaching is to be realized. Hasty improvisation in entering upon such projects together with inadequate support and provision for these desirable features might prove to be their undoing.

Let there be no mistake about our attitude. We are delighted with the prospects of the present condition which has motivated and permitted so many teachers and administrators to embark upon these new ventures. They are loaded with potential. Our brief theme, in what might be called a minor or negative key, has been composed to remind us to check the American proclivity to jump on bandwagons. We need to beware of seizing each new educational idea and riding it to death. It may be hoped that in the intervening years since the decade of the 30's, when we had our last binge of educational bandwagon riding, we have achieved a maturity, a wisdom, as well as a vision of how to view objectively and to test imaginative new ideas so that they become available for strengthening our educational system.

R. N. B.

RESPECT THE PUPIL

The secret of education lies in respecting the pupil. It is not for you to choose what he shall know, what he shall do. It is chosen and foreordained, and he only holds the key to his own secret. By your tampering and thwarting and too much governing he may be hindered from his end and kept out of his own. Respect the child. Wait and see the new product of Nature. Respect the child. Be not too much his parent. Trespass not on his solitude. Respect the child, respect him to the end, but also respect yourself. Be the companion of his thought, the friend of his friendship, the lover of his virtue, but no kinsman of his sin. Let him find you so true to yourself that you are the irreconcilable hater of his vice and the imperturbable slighter of his trifling.—*Ralph Waldo Emerson.*

—As reported in *The Educational Forum*, January 1960

WHO SHOULD GO TO COLLEGE?

BY RALPH PRATOR*

Selecting a proper life's work is a most complex responsibility, but in this paper we shall confine ourselves to only two aspects of career choosing: what are the guidelines that can help the individual make a proper choice and what are the societal and other pressures that may misdirect his decision.

Each passing year adds to the complexity of choosing a life's work. Jobs in the *Dictionary of Occupational Titles* accumulate like snow piling up in the High Sierras during a raging winter storm. Confounding changes take place within what at one time appeared to be stable subjects. Mathematicians once thought that Euclid had said the last word in geometry, but within recent years even Euclid wouldn't recognize the avenues down which his subject has traveled. For hundreds of years physics retained the same content; then it started sprouting feelers into the realm of the unknown like an outburst of branches on a hybrid plant that has just received a shot of hormones.

Buck Rogers' fantasies of yesterday are old-hat realities of today. Rocket ships, ray guns, and monorails are here until even more fabulous dreams take their places. In this mad, exciting whirl, our students are swept up like puffs of smoke in a high wind, buffeted about by forces neither they nor we fully understand.

Yet as this kaleidoscopic view of our progress flashes before us, certain guidelines become increasingly clear. The place of the unskilled, and relatively unschooled, members of our society is fading from the picture. More and more schooling and skill are required of tomorrow's leaders and workmen. In five short years, from 1950 to 1955, the number of high school graduates in California increased by 22.6 per cent. At least until 1975 this rapid rate of increase will be maintained.

* President, San Fernando Valley State College, Northridge, California.

The compelling drive for more education is having a tremendous impact on our colleges and universities. Probably as high as 75 per cent of the average high school enrollment is in the college preparatory program. We know that about 50 per cent of the eighteen-to-twenty-year-olds are at present in college. The percentage has been growing at the rate of one per cent per year for the past twenty years. When these statistics are translated into college enrollments, we learn that we shall have to accommodate an awesome figure of over 800,000 students in the colleges of California by 1975.[1] Some 65 per cent of the total number of college-age youth in this State will be in some kind of college or university.

Our first guideline then is quite clear. The young student in today's world must set for himself higher educational goals. And the citizens of this State will need to increase the opportunities for higher education in California in order to accommodate burgeoning enrollments which threaten to triple or quadruple, if we are to accede to the urgent demand for more schooling and its corollary—improved skill.

Since the time Plato, the teacher, said of Aristotle, the student, on the occasion of Aristotle's absence, "Intellect is not here today," we have been refining our assessment of this most necessary factor in learning—intelligence. In the early 1900's, Alfred Binet hit upon a device to measure the ability to understand and use abstract symbols, and we have made increasing application of his discovery to predict success for our boys and girls. We are frequently asked what is a satisfactory IQ for college? A number of authorities claim that the IQ should be at least 110, but this does not take into account the fact that among our many colleges in America there is a wide variation in what is required for success. We know from accumulated statistics that the lowest level of ability in one college may be in the upper 10 per cent of ability in another college. So when we ask the question, what is the satisfactory IQ for college, we must also ask, for what college? If we settle on the 110 IQ, we automatically eliminate about 80 per cent of our young people of college age.

In the light of what we already know, we can't settle on any such arbitrary restriction or exclusion, for there is threaded through the whole process of success in any intellectual or other kind of activity the factor of motivation. This factor almost defies description, let alone measurement. We know that we can influence it, but whether we can develop or create it is a much debated subject. It is ironical, in a way, that we are probably far closer to solving the problems of space travel and inter-planetary communications than we are to finding definitive answers to the puzzling questions of motivation. Of one thing we are certain, it centers closely around

[1] Ronald B. Thompson, "Projected College Enrollment." *The College Blue Book* (Ninth Edition).

the concept of interest and it is this factor in motivation which is of greatest concern to the schools and colleges.

Thomas Edison, Albert Einstein, and even Dwight Eisenhower were average to mediocre students and yet some impelling drive within them catapulted them into the select circle of eminent men. We must recognize the catalytic property of motivation in success. And we need also to realize that success feeds on opportunity.

Not so many years ago countless thousands of young men were afforded the chance for a college education which might not have been granted them but for the GI Bill of Rights. A study of one group of these young men, selected entirely at random, is most revealing. In 1943 Edward Thorndike studied 17,000 volunteers for aviation cadet training. None had had any college experience. All these young men were drawn from the eighteen- to twenty-six-year-old group. Twelve years later this same group was again studied. Of the original 17,000 some 10,000, 59 per cent, had entered the professions or related occupations which required some college training.

Motivation and opportunity—we could present hundreds of illustrations of their significance. How well we see the danger of settling on an arbitrary limitation that would limit college education to a small segment of our population. Who can say how many of those whom we reject might have been "Einsteins" or "Edisons" or "Eisenhowers?"

Through the devices we have for measuring innate abilities in people, we have discovered that the range of individual differences defies description. High aptitude for music is not necessarily associated with the same high aptitude for doing well in literature or science or history. The same observation could be made about high aptitude in art, and probably even more so for high aptitude in an area that requires innate ability and understanding in working with mechanical things. In this latter category lies a resource that may well be overlooked in our mad dash to excel Russia in the production of engineers, physicists, and astronautical scientists.

We know it takes many kinds of intelligences to make up a happy work force. It takes many kinds of intelligences to have a happy, intelligent citizenry. Our second guideline is two-pronged. The student must recognize the tremendous variety of abilities which characterize our people—that there is a skill in plumbing as there is a bent for philosophizing. He must assess as accurately as possible where his own capacities lie and strive for their highest development.

Our third guideline for today's student is that he not only weigh his own capacities but match them with the opportunities he finds in the society of which he is a part. He owes a loyalty to himself to press his talents to the mold they fit.

Parents must be mindful of the diverse opportunities to refine latent

talents and skills represented in the intricate mosaic of the boundless extent of our community resources. Sons may be like fathers and daughters may be like mothers, but perhaps we should count our blessings that this is not always so. Some of the most tragic mistakes that we witness are parentally imposed careers on sons and daughters. Potentially happy plumbers and mechanics may come from homes of doctors and lawyers. Fortunate indeed is the child with parents wise and tolerant enough to permit the happy wedding of interest and talent.

We have been so concerned for so long with our professions and have so exaggerated their contributions to our society that we have relegated to inferior places of respect an entire catalog of necessary occupations. Many of these pursuits require high levels of special talents not measured by our IQ tests and many of them can be taught successfully in our schools and colleges. Numerous occupations require special personal characteristics that are far more relevant to success than traditional basic skills and knowledges. We must insure proper outlets for our Johnny Appleseeds as well as our Dr. Kildares.

We need to provide these opportunities through programs that will permit what we may call vertical diversification. That is, vertical in the sense that we shall so scale emphasis on subjects such as mathematics, science, and skills of communication that from an acceptable foundation we may provide a whole world of opportunity for the mechanically minded and artistically talented members of our society. Through the resources of our schools and colleges, we shall open doors to creativity. Even if out of this horde of young people we identify and refine just a few Edisons, the total effort will have been eminently worthwhile. Near the top of our vertical scale, of course, will come the people who will design the future rockets in which we shall travel to and from the moon and the planets. Between the base and apex of this vertical scale we shall provide education for the host of talents and skills required to build the rockets and keep a balance in our society which will enable us to live happily with the exploits of our creative geniuses.

The societal pressures and other forces which make for favorable or unfavorable adjustments in this whole pattern of fitting innate abilities and talents to the necessary work of the world are so complex that we can deal in this discussion with only a few of the most pronounced.

At the present time societal needs are in a highly fluid state. Changes are taking place so rapidly that occupations today may cease to exist tomorrow. They may be replaced with concepts and requirements as remotely related as horseshoeing and the manufacturing of automobile tires. Dr. Clifford Furness, Chancellor of the University of Buffalo, said on May 14, 1959, "There are two reasons for the phenomenal speeding up of technology during this generation. First is the fact that the results of

science are cumulative. Like the sustained thrust of a rocket motor, each increment builds on what happened before, so the farther it goes the faster it goes. The second important factor has been military necessity. Modern war has become highly scientific. This has led to an interest in and support of science and technology without parallel in history."

According to the inventory of job openings in California, engineering outlets increased from 353 in May 1958, to 989 in September 1959, almost 300 per cent. During the same period of time, there was a decrease in openings in scientific and mathematical fields of almost 20 per cent. In certain selected skilled occupations, including machinists, machine operators, electronics technicians, tool and die workers, openings increased from May 1958, to September 1959, by 100 per cent.

These fluctuations and changes in themselves constitute tremendous pressures for proper preparation on the part of our young people. Virtually every occupational outlet of any merit requires post-high school education at the present time. But we have been entirely unrealistic with respect to our demands in this area. For example, there started during the depression years an upgrading of personal and educational requirements for jobs without regard to job skills needed, simply because the supply of talent was plentiful. This fallacy has persisted down to the present time. In 1950 Harold P. Rhodes studied the need for technical training in California and solicited opinions from 440 industrial concerns and government agencies about what talents were actually required for successful on-the-job performance in the industries represented. At least half of the organizations surveyed replied that they were using engineering graduates in positions that did not require professional engineering training. Dr. Rhodes' conclusion was that if we could suddenly bring about a proper balance and get both industry to accept and educational institutions to produce technicians, we would correspondingly release the time and energies of our qualified engineering scientific manpower for responsibilities that challenged their talents.

In 1957 the President's Committee for the Development of Scientists and Engineers reported that the greatest obstacle in the progress of the interstate highway program was the lack of technicians. It disclosed at that time a shortage of over 46,000. We can safely say that one of the principal reasons for our failure to keep pace with the Russians in the rocket race is our limited supply of highly skilled and highly trained technicians.

These statistics relate directly to our lack of response and adjustment to the pace of our progress. Mr. Gardner puts it very well when he points out one of our dilemmas. There may be excellent plumbers and incompetent philosophers. An excellent plumber is infinitely more admirable than an incompetent philosopher. The society which scorns excellence in

plumbing, because plumbing is an humble activity, and tolerates shoddiness in philosophy, because it is an exalted activity, will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water.

In California we are uniquely equipped (from the point of view of the educational process) to cope with the problem of diversification. We have a large number of what Dr. Conant titles the "comprehensive high school." These high schools are intended to provide opportunities for a wide variety of talents. In higher education we have unique opportunities too. Our junior colleges have a primary mission for the development of those technicians from whom we have such great expectations. Our State colleges have been operating on the principal of vertical diversification of educational opportunities and, of course, our University has been doing a magnificent job of providing diversified opportunities in the horizontal complex; that is, opportunities for a selected group of young people who may be pointing toward any one of a variety of professions and research-centered educational outlets that call for a very high degree of abstract intelligence. But to do our jobs well we need more enlightenment on the part of our patrons. They must understand that it requires a variety of talents and abilities to do the present work of the world. Furthermore, we shall have to break down those barriers of parental and societal bias that label certain occupations unworthy of respect. And lastly, we shall need to devote more and more of our resources to assure opportunities for more intense education of the many youths who will carry on the accelerated pace of our progress.

These people, then, are the central figures in our drama—the student, his parents, and his teachers. Unless each of them has a complete and accurate understanding of the manner in which we make a proper adjustment of our resources, personal and societal, we cannot expect to maintain the progress to which we have become accustomed nor compete favorably in the race with our highly imaginative neighbors.

RESPONSIBILITY FOR EXCELLENCE

Responsibility for the excellence of our schools and colleges falls directly upon the American family. The attitude of parents toward learning and scholarship, the values they place upon intellectual achievement, and their willingness to make material sacrifices in support of their schools will largely determine the progress of education in this country. In this endeavor government acts only as the agent of individual citizens; it offers no substitute for private conviction and understanding.—*President Julius A. Stratton*, Massachusetts Institute of Technology.

A "POOR MAN'S" LANGUAGE LABORATORY

BY DONALD M. CRAIG*

Because a foreign language program must recognize that "language is speech," the most exciting development in this field in recent years has been the widespread adoption by the colleges of the resources of the language laboratory.

These new mechanical and electronic aids have made it possible to increase the aural and oral practice for a college student twenty-five to one, but only after an outlay by the college of from $13,000 to $50,000 for basic equipment. This figure, by the way, may not include remodeling or construction of a room with special isolation recording booths and acoustical features. Neither does it include the cost of at least a part-time technician or the increasingly evident "laboratory director" or coordinator.

The heartening fact is, however, that despite these not inconsiderable financial hurdles, each month brings news of the establishment of another college language laboratory. It has become too valuable a teaching device to be ignored.

But what of the high school teachers of foreign languages, on that step in the educational ladder where the foreign languages are most widely introduced to students? Will their school boards, frequently made up of prudent businessmen reluctant to add to their community's tax burden, consider buying a foreign-language laboratory when they are faced not only by teachers' pressure for salary increases but by the immediate problems of rocketing school population and inflated construction costs?

As Eliza Doolittle said, "Not bloody likely."

Must the high school's only language laboratory, then, be "one tape recorder and one phonograph," as in the college listed in the booklet, *Foreign Language Laboratories in Schools and Colleges,* issued in 1958 by the United States Department of Health, Education and Welfare? Most

* Foreign Language Department, Carmel (California) High School.

high schools cannot afford, considering space demands, to isolate a regular classroom for this special usage. Furthermore, the scheduling of classes is so tight in many schools that an isolated language laboratory would probably be used inefficiently. High school students have practically no free time during the school day. They are not generally permitted to wander about the campus during class hours as the more mature college students may do. In many semi-suburban areas the school bus schedule is a pitiless tyrant. Shifting classrooms, even by pre-arrangement, is never truly satisfactory. And the inevitable confusion and lack of final responsibility among five or more independent language teachers is recognized as such a stumbling block even in colleges that the "language laboratory director" has perforce evolved.

Even if, to take my own 620-pupil high school as an example, each of our five modern language teachers were to have one entire day in the week reserved at the laboratory for him, what will happen in two years when we have additional language teachers? The time available before and after school is unusable to a large degree; the regular classes begin at eight o'clock and end at four; there is the extracurricular program, including athletics; there is the bus schedule. Besides, it is seriously questioned whether fifty minutes of earphone work once a week can compare in effectiveness with a program of fifteen minutes every day.

Reluctantly, one is forced to the conclusion that for the high school teacher the language laboratory must be in his own classroom. I say "reluctantly" for if a $13,000 layout is an insurmountable obstacle for the average board of trustees, what chance has a language laboratory in each classroom? The most up-to-date figures on a compromise plan are still sufficiently chilling. Frank Gulick, Consultant for the California Department of Education on the National Defense Education Act Administration, states that it is now possible to equip a standard classroom with thirty individual seat-stations, complete with receivers, microphones, and partitions for about $4,000. This is undeniably more realistic, but many administrators will hesitate to recommend its installation, for rapid obsolescence is a characteristic of today's electronic devices.

But if the teacher really wants to experiment with a language laboratory (junior grade), he can do so for astonishingly little money. For three years I have been using a closed broadcasting system in my Spanish classes at a cost of about $300, not including a tape recorder and a phonograph which were already part of the school equipment. This spring another unit has been installed in the French classroom at a total cost of about $900, including the tape recorder, a 25-watt amplifier, and thirty-two headphones.

The installation is simplicity itself. High around the walls of the room are run two parallel 10-gauge bare copper wires about a foot apart. They are just tacked to the wall; they are not hot; they are absolutely harmless.

This acts as the broadcasting antenna and insures uniform reception everywhere in the room. The ends are connected with the amplifier, which gets its power from any wall plug. The amplifier plugs into the speaker on the recorder or phonograph—and the broadcasting unit is ready.

The receivers are inductophone headsets, each costing about $10 and very durable. They have small, detachable, easily sterilized rubber nipples which fit into the student's ears. These audiophones receive the impulses directly, without intervening wires, from the broadcasting unit. This wireless feature not only permits free movement and eliminates a tripping and tangling hazard, but it allows the teacher to divide and shift his class around as he sees fit. For example, the teacher may allow the "quicker" students to listen in to taped conversations or stories requiring written responses while the rest of the class is reviewing or doing special work without the headgear.

In this manner one of the greatest dilemmas of the language teacher is partially solved. The interest of the gifted student can be retained and stimulated while the average or slow pupil can receive individual attention.

To me, the test of a language laboratory is whether or not it *greatly* increases the time that each student is actively responding to the foreign language thought pattern. In an average class of thirty youngsters, each student could normally claim much less than two minutes of his teacher's individual attention. And while one student responds, twenty-nine minds wander. If, on the other hand, all thirty pupils are making intimate contact and response with a teaching device for fifteen minutes, a great increase in efficiency has been made.

In class, the phones have great utility in pronunciation drills and intonation and dialogue practice. During these drills, the teacher may walk the aisles and listen to each student's accent without interfering with the total class response. Earphones are also used for comprehension tests. A story is told, interrupted at frequent intervals by questions on what has just been said. Since the students have no individual microphones to record their own voices as in the more elaborate laboratory arrangement, they write rapidly the answers to the questions on a sheet of paper for the teacher's later inspection. Student use of the microphone is not eliminated, however, but is reduced to special days within the week's lesson plan.

The clear advantage that the earphones have over a mere loudspeaker tape recording or the teacher's live voice is that each student is actually isolated by reason of the 'phones. He *must* concentrate; he cannot ask another student for help; he must develop immediate reactions to the question. There is no time for him to translate the question into English, and then laboriously reconstruct an answer in the foreign idiom. The voice in the ear will not wait; it will not humor him. Another important point, too, is that a variety of accents and inflections, frequently available in one's

own community, may be used on the tapes, for students sometimes become so accustomed to their teacher's voice that they find it difficult to adjust to that of a stranger.

It may be asked, "Where do you get the taped material?" To which a doleful voice replies, "You must make your own. There is no other way of getting exactly what you want for your particular purpose." However, recently there have appeared on the market complete courses in the modern languages with texts and coordinated tapes. Most of these offerings are expensive, but good tapes, closely tied to the text, will become more and more common and less expensive.

Of course, it is obvious that within a few years there will be even more advances in the electronics field which will cater to the needs of the language teacher, but with the simple arrangement that has been described in this article a great deal of valuable work and experimentation may be carried on at little cost.

Although wisdom counsels that we move cautiously, we cannot remain stock-still awaiting the ultimate refinement and the irreducible price. The inductophone language laboratory may be a very convenient method for keeping abreast of the times without risking considerable sums on a technique that is still in its infancy.

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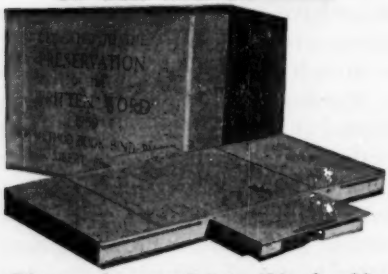

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OPENING A NEW JUNIOR HIGH SCHOOL

BY WILLIAM J. FERGUSON*

You have been appointed as the principal of a new junior high school. It is your responsibility to make all preparations necessary to enable the school to open smoothly and effectively. How do you proceed? What steps do you take and in what order? How can you make reasonably certain that you complete all important actions beforehand, that you forget nothing essential?

This problem is one that is now being faced by secondary school principals all over our State and nation. The growth of school population leads to the building of new schools, and every new school requires an administrator who must make it ready for opening. Even though he may already be an experienced principal, he faces a specialized undertaking, a task unique and quite different from that involved in assuming the leadership of an established and ongoing school.

This article is an outgrowth of the answer which the Los Angeles City Schools have provided for this problem. In 1956 Los Angeles had, within a two-year span, opened five new junior high schools. A dozen others were scheduled for construction and opening in the succeeding five years. Rather than requiring each newly appointed principal to "go it alone," it was felt that there should be a sharing of experience, and the compilation of a plan which might serve as a guide for the principals who were subsequently to be assigned the responsibility of opening these new schools.

The project was initiated in the spring of 1956 by Roy Arnheim, assistant superintendent of junior high schools in the Division of Secondary Education of the Los Angeles City Schools. The writer was named chairman of a committee of five principals,[1] each of whom had recently opened a new junior high school. The report which this Committee prepared was

* Principal, Paul Revere Junior High School, Los Angeles City Schools.

[1] Ralph Bauer, Sequoia Junior High School; Marion Herriott, Airport; Edwin Olmstead, Madison; Robert Purdy, Webster; William Ferguson, Revere.

used by the principals who opened new junior high schools in Los Angeles during 1957 and 1958. A new committee comprising these principals[2] and the original chairman revised the initial report in 1958, and this revision has served as a guide for the principals who were assigned to new junior high schools during 1958 and 1959.

Designed though it has been for use primarily in Los Angeles, this report has seemed to our Superintendent of Schools, Ellis A. Jarvis, to be usable whenever a community is preparing to open a new secondary school. Granted that some adaptation to local needs will be necessary, and recognizing that the problem will vary in accordance with the size of the locality and of the new school itself, we believe that the essential plan of procedure, tested by experience as it has been, is generally applicable.

What follows, then, is an adaptation of the 1958 Committee report referred to above. It has been condensed slightly; however, deletions have been made only in areas where the procedures have a restricted local application.

We have said that each principal using this report will need to adapt it to his own individual situation. It may be well in this connection to provide a point of departure by explaining briefly the Los Angeles school policies which apply to the opening of new secondary schools:

1. Each new junior high school is designed to accommodate 1600 pupils initially. A bungalow-type construction on sites of approximately twenty acres is used.
2. A preparatory period of two months is provided. For schools opening in September the principal, boys' and girls' vice-principals, and the head counselor go on duty May 1; for schools opening in February these administrators begin their assignments December 1.
3. Similarly, a secretary and a clerk go on duty on either May 1 or December 1.
4. The assignment of the head custodian begins when the new plant is sufficiently complete to require custodial and security service.
5. In Los Angeles, resource persons in the central offices (supervisors, consultants, etc.) are available to assist the new principal in the areas for which they have responsibility. These individuals are referred to by their titles subsequently in this article at the places where the principal is likely to call upon them.

The remainder of this article outlines the procedures which the principal is advised to take in opening a new junior high school. These procedures are not necessarily presented in chronological sequence. However, the total list is considered to be reasonably complete.

[2] Albert Cartwright, White Junior High School; Charles Hamer, Henry; Daniel Minock, Hughes; Cosby Stone, Markham; Pat Turner, Fleming.

In using this outline, the principal will need to omit or to modify some of the suggestions, as his own local situation requires. However, the majority of the recommendations can be acted upon without modification.

If you are a principal opening a new secondary school, these, then, are the practical actions which it is recommended that you should take before opening day:

I. CERTIFICATED PERSONNEL

A. Arrange with your superintendent for the appointment of a boys' vice-principal and a girls' vice-principal, and a head counselor.

B. Subsequently obtain his approval of the registrar and the coordinators who are to be assigned to your school.

C. Select a librarian.

D. Teachers.

1. Make appraisal of teacher needs.
2. Devise a personnel reference form for interviews.
3. Contact subject supervisors for information about prospective teachers. Acquaint yourself with the teachers who may be eligible for *en masse* transfer from the school contributing a major part of your enrollment.
4. Refer to transfer request list published by Director of Assignments.
5. Conduct interviews with all teachers under consideration for assignment to your school.
6. Notify Assignment Office and subject supervisor of selection of personnel, when made.
7. Keep in close touch with principals concerned in transfers.
8. As a follow-up to interviews, notify by letter teachers selected and those *not selected* of your decision.

II. CLASSIFIED PERSONNEL

A. Needs:

1. Secretary and clerks.....Classified Personnel Section
2. Head Custodian.....Director of Operations
3. Financial Manager.....Student Body Finance Section
4. Cafeteria Manager.....Food Services Section
5. Gardener .....Gardening Section

B. Notations:

1. The secretary and at least one clerk will be needed immediately. The total clerical personnel is contingent upon the estimated enrollment.
2. The head custodian should be instructed so that he may assume the initial responsibility for receipt and storage of supplies and equipment.

3. The allocation of clerical duties, time, and hours of service should be made in advance.
4. Cafeteria workers, custodians, and assistant gardener in most cases will be assigned automatically. Some of these should be experienced persons who are transferred from other assignments.

C. Procedures:

Interviews and assignments are to be arranged with the responsible clerks subordinate to the supervisor of classified personnel.

III. PHYSICAL PLANT

A. Completion of plant:
1. If necessary, arrange through assistant superintendent and host principal for temporary and separate quarters in another school. This will involve making arrangements for equipment, a telephone installation, supplies, etc.
2. Secure blueprints of school from Educational Housing Section.
3. Negotiate, as necessary, the priority schedule for completion of facilities (e.g., offices, lavoratories, library and textbooks, multipurpose, utility building, classroom units, shops, homemaking, in that general order).

B. Room key control:
1. Survey key plan.
2. Arrange for labeling. (Metal key tags and rings can be ordered.)
3. Special attention needs to be given to control of master keys.
4. Arrangements should be made for the security of all keys.

C. Room and building numbering:
1. Consult with the supervisor of Educational Housing as to the master plan.
2. Arrange with Maintenance Section for location designation signs.
3. Arrange for proper visual placement of room numbers, and for their early installation.

D. Landscaping plan:
1. Review plan with gardening supervisor and ask for modification where not functional.
2. Turf on athletic field should be in and established early in building program.

E. Traffic and Safety:
1. Arrange meeting with Safety Section to survey approaches to school.
2. Write letter to Safety Section confirming agreement as to necessary traffic signs, signals, and crosswalk.
3. Plan for bus loading and unloading.
4. Arrange with the Safety Section and your maintenance department for suitable on-campus safety demarcations.

F. Physical education facilities:

1. Arrange meeting with physical education supervisors so that placement of outside physical education facilities and line painting may be done.
2. Plan similarly for inside gymnasium installations.
3. Follow up to see that these plans are activated.

G. Visit two or three recently completed junior high schools.

H. Telephones:
1. Arrange through director of Administrative Services for installation of telephones.
2. Be sure there are sufficient trunk lines and outlets.
3. Arrange for installation of *public* telephones.
4. Arrange for installation of phones in student store and cafeteria.

I. Keep a list of incompletions and follow them up.
1. Go over with the resident building inspector the "punch" list of incompletions.
2. Determine which is contractor's and which is school district's responsibility.
3. Investigate the need for rewaxing floors prior to moving in furniture.

J. In conjunction with Security Section, make a complete security survey of the plant.

K. Obtain rendering of school from Housing Section.

L. Bells:
1. Review location and size of bells. Plan for readjustment where necessary.
2. Arrange with area maintenance for early activation and testing of system.

M. Arrange for activation of P.A. system with installing company. Arrange for latter to demonstrate operation of the system to all interested personnel.

N. Ascertain location of emergency cutoffs for all utilities.

O. Prepare chart showing location of fire alarm boxes and fire extinguishers.

P. Before final inspection review with the appropriate supervisors the completion of all contractual work.

Q. Inform faculty of operation of heating units.

R. As final inspections are completed, review guarantee periods for all work.

IV. SCHOOL COMMUNITY

A. Obtain school's boundary maps from head boundary coordinator.

B. Plan for school bus transportation.
1. Discuss bus transportation problems with head bus driver and arrange for bus passes.
2. Contact common carriers for their schedules and secure bus tickets for sale to students.

3. Also, when necessary, make arrangements with common carriers for special buses to and from school.

C. Conduct independent survey of traffic hazards.

D. Confer with Safety Section (coordinator of traffic safety) on safety and traffic problems.

E. If community groups have studied traffic and safety problems, confer with them.

F. Follow up with written requests to Safety Section early. Send copy of requests to assistant superintendent.

G. Make contacts with contributing elementary schools and senior high schools.

H. Inform parents of transportation plans relating to pupils attending the school. Use letters to parents, press releases, and/or meetings at school of interested parents.

I. Establish a policy for community use of school facilities.

J. Set up with neighboring principals local policies on permits.

V. SUPPLIES AND EQUIPMENT

sult with your maintenance supervisor.)

A. Consult with Supplies and Equipment Branch regarding the following:
   1. Standard consumable supply list
   2. Standard non-consumable supply list
   3. Standard equipment list
   4. Delivery of a supply of Business Division Supplies and equipment forms

B. Work with the supervisor of Supplies and Equipment Branch regarding special needs.

C. Determine dates of deliveries.

D. Consider preparing an equipment inventory form for each classroom.

E. Plan for an area adequate in size to receive supplies. Provide top security to prevent theft. Have lock combinations changed if possible.

F. Inspect equipment and non-consumable supplies for damages and prepare a special form concerning damaged equipment.

G. Budget supply money.
   Work with department chairmen concerning special supply needs over and beyond the standard lists. Get outside experienced help in compiling initial consumable supply order.

H. Develop with the secretary and head custodian a specific plan for the receiving, accounting, and distribution of supplies. Subsequently, make up a list of non-consumable supplies and equipment.

I. Work out with the supervisor of Supplies and Equipment any necessary modification of kinds and placement of equipment.

J. Become familiar with the problem of hooking up of equipment. (Con-

K. Arrange an early conference with the area equipment foreman to plan for placement and installation of furniture and equipment.
L. Arrange early for the delivery of all school lockers and locks. Prepare a plan for the numbering of all lockers. See that combination tabs are not left in lockers, but instead are turned over to the head custodian. Survey the plant for extra lock needs.
M. Coordinate direct delivery of equipment and building completion with direct delivery clerk in the Business Division. Provide adequate storage space.
N. Order school name, library, and textbook rubber stamps early.
O. Order school stationery.

VI. BOOKS

A. Textbooks
   1. Consult the head supervisor of the Textbook Section, the chief textbook clerk, operational supervisors, and department chairmen regarding the textbook order.
   2. Develop with the administrator in charge of textbooks, the librarian, and the clerk a plan for the processing, handling, and distributing of textbooks.
   3. Suggestions regarding the processing procedure:
      a. Borrow four or more numbering machines and make sure the following are available: sponge cups, gummed labels, extra tables, and audio-visual carts.
      b. Arrange with the Maintenance and Operations Branch for additional help to unpack the textbooks.
      c. Plan to recruit additional help from interested parents, teachers, and pupils.
      d. Organize an assembly-line procedure for the actual processing.
   4. Plan with the clerk for the permanent shelving of textbooks. Arrange with the Textbook Section for additional help.
   5. Prepare a textbook catalog for the school allocating the materials to the various levels.
   6. Prepare a textbook bulletin to teachers detailing the procedure for the handling of textbooks.
   7. Be certain that there are adequate working facilities for the textbook clerk.

B. Library books.
   1. Consult with the head supervisor in the Library Section and department chairmen regarding the library order.
   2. Prepare order for magazines and class sets of periodicals.
   3. Plan for the librarian to set up the catalog system. Be sure the librarian is at the school when the books are delivered.

4. Do not plan to open the library to classes for several weeks.
5. Develop a bulletin explaining library procedures as they involve the circulation of books and class visitations.

VII. ORGANIZING THE SCHOOL

A. Determine areas of responsibility of principal, vice-principals, head counselor, registrar, librarian, coordinators, and others.
B. Establish lines of communication between various areas of responsibility: e.g., between vice-principals and counselors, health coordinators, and counselors.
C. Ascertain enrollment data.
D. Determine curriculum.
   1. Decide on probable offerings.
   2. Get elective choices.
E. Organize the master schedule of classes.
F. Visit contributing schools, disseminate information and ascertain characteristics of student population. A visit to new school site by student representatives from contributing schools is suggested.
G. Prepare bell schedule.
H. Plan guidance program.
I. Prepare attendance procedures.
J. Prepare faculty handbook or reasonable substitute. Prepare opening procedures either separately or as a part of this handbook.
K. Plan for student organization and prepare student handbook.
L. Plan faculty orientation.
M. Plan for student hosts and hostesses to serve for opening days.
N. Send letter home to parents before close of preceding semester giving information concerning significant factors such as transportation, etc.
O. Prepare needed forms; e.g., lunch-pass requests, hall passes (if Board form not used), election forms, class-coverage forms, notification of absence, referral blanks, bus transportation requests, bulletin notices, citations, etc.
P. Prepare for the opening of food services.
   1. If the cafeteria is not open, plan for other service.
   2. Move into full feeding program gradually.
   3. Plan for orientation of pupils to use of cafeteria facilities.
Q. Prepare home study and testing schedule.
R. Plan audio-visual procedures.
S. Arrange for transfer of records from contributing elementary and junior high schools.
T. Set up apportionment cards.
U. Plan grounds supervision schedule.
V. Receive, sort, try out, and organize keys.

W. Plan for school publications: annual, newspaper, etc.
X. Organize school calendar.
Y. Establish Cafeteria Service class and coordinate through teacher sponsor with financial manager and cafeteria manager.
Z. Make provisions for the substitute teacher.
AA. Prepare emergency drill procedures.
BB. Set up procedures for the use of the P.A. system.
CC. Obtain an adequate supply of study guides, courses of study, and curriculum materials from the Instructional Services Division.

VIII. PUBLIC RELATIONS

A. List community organizations and contact as many as possible.
B. Plan for systematic contact with newspapers.
C. Organize Parent-Teacher Association.
   1. Initiate by writing to President of District P.T.A.
   2. Follow up with District Extension chairman.
D. Organize opening-day ceremonies. Consult supervisor of Public Information Unit.

IX. STUDENT BODY

A. Arrange with assistant superintendent and the principal(s) involved for receipt of money from junior high schools which will contribute pupils to you, and/or for loan from Student Body Finance Section.
B. Plan for methods of handling moneys:
   1. Selling supplies.
   2. Homeroom collections—drives.
   3. Sales of annual, newspaper, etc.
C. Develop procedures for:
   1. Authorization of expenditure of student body money, and
   2. Establishment of needed department accounts.
D. Plan for organization and functioning of student finance committee.
E. Select bank.
F. Arrange for financial stationery.
G. Purchase or borrow cash register and any other needed equipment not provided by Board of Education.
H. Purchase needed school supplies, including textbook covers, for sale to pupils.
I. Consider stocking and selling gymnasium clothes and shoes.
J. Plan for sale of popcorn, either through rental or purchase of machine.
K. Establish plan for issuance of lockers.
L. Consider planning for the compilation during the first semester of a charter roll, with all original pupils and employees signing. When completed, this roll can be framed, and photostatic copies made and subsequently sold as a student-body enterprise.

WHAT'S HAPPENING IN CALIFORNIA SECONDARY SCHOOLS

BY WILLIAM N. McGOWAN*

What's Happening in Junior High Schools

San Francisco junior high schools have re-established a debating league as a program of enrichment to be of benefit primarily to students of English, public speaking, and social studies. The program will be developed around an "Invitational Debating Tournament" for the spring 1960 semester.

Plans for the tournament call for debates to be scheduled so as not to conflict with regular class time and so as to minimize the necessity of movement of students from one school to another. Judges are to be people with debating experience, chosen from the judicial, legal, civic, and business life of San Francisco.

Louis Pasteur Junior High School, Los Angeles, has just published a new Pupil Handbook. Dr. Helen J. Rogers, principal at Pasteur, reports that the handbook was developed by pupils, parents, and faculty, representing a comprehensive approach to providing practical materials to be used in orienting new pupils at Louis Pasteur. The table of contents lists the following introduction and chapter headings:

Welcome to Louis Pasteur Junior High School
Your Handbook
Have You Met the Important People?
Are You Lost?
Why Is Our School Named for Louis Pasteur?

* Executive Secretary, California Association of Secondary School Administrators.

Do You Have the Information You Need?
Do You Want to Be President Some Day?
Will You Plan to Serve Your School as a Cavalier?
Do You Want a Good Report Card?
Do You Always Put Your Best Foot Forward?
What Activities Will You Choose?
Are You a Law-abiding Citizen?

The ninety-one-page, soft-cover handbook is punched so pupils can keep it in their notebooks. It is graphically illustrated with charts, graphs, and other illustrations that convey meaty information in a well-organized, attractive manner. It contains statements on discipline, laws affecting youth, codes of dress for boys and girls, a code of conduct, statements concerning the meaning of marks, study hints, and much other interesting and valuable information.

What's Happening in Four-Year and Senior High Schools

The *San Francisco Unified School District* provides a wide range of science and mathematics studies.

The network of science programs in the SFUSD's schools is being consolidated and continually re-evaluated.

City schools of all divisions are answering national calls of assistance in determining better ways to develop young scientists and mathematicians and to provide science and mathematics training for the general student.

Both teachers and administrators are playing important roles in the development of the ideal curriculum for developing the citizen of tomorrow.

Several special programs are in progress in city high schools.

The newly instituted Bio-chemistry Laboratory at Galileo High School is progressing while new facilities for the program are being constructed.

Polytechnic High School's Lux Electronics Laboratory is drawing visitors from all over the world.

Balboa High School is carrying out a program in conjunction with the Massachusetts Institute of Technology.

Lincoln High School has a pilot program in which a nonmathematical approach is given to the study of physical science, and has established an "honors" section in geometry for outstanding sophomores.

Lowell High School is working on an integrated program in mathematics whereby the separate courses of algebra, geometry, and trigonometry are merged.

George Washington High School is offering a special program for superior mathematics students.

Mission High School's special Chemistry III course is achieving good results.

Continuation High School has recently revamped its mathematics program to provide greater emphasis on business mathematics, while college preparatory mathematics has been integrated with the science program.

Some junior and senior high schools are participating in the formulation, re-evaluation, and usage of new instructional materials under the National Science Foundation Plan which is co-sponsored by Yale University.

SFUSD participation in the Yale study came about when it was discovered that an on-going, similar, study instituted in the District in 1958 sought ends similar to those indicated by the National Science Foundation.

This year nine secondary-school mathematics teachers attended special meetings in Chicago to coordinate better the SFUSD mathematics plans with the NSF group.

California secondary-school administrators feel the same concerns that are being expressed by secondary-school people throughout the nation concerning testing and scholarship programs. As a result of interest by the *Executive Board of the California Association of Secondary School Administrators* in certain aspects of the National Merit Scholarship Corporation Program, the following report was released in January to California newspapers:

An investigation of the National Merit Scholarship Program was initiated this week by the Executive Board of the California Association of Secondary School Administrators, meeting at the Hollywood Roosevelt Hotel in Los Angeles.

The investigation was begun to identify commercial aspects of the program and to determine whether or not the actual cash scholarships awarded are sufficient to justify the expense to students and school districts for participation in the program.

School time is taken for tests that form the basis of the program and school personnel are used to administer these tests. At first the tests were provided without charge to the top 5 per cent of any senior class desiring to take the test. Later the tests were made available to any senior student who would pay $1.00. More recently, all students taking the test must pay a $1.00 fee. In 1958–59, 478,991 students took the tests, with only 750 of this number winning scholarships, and about one in three of these final award winners received $100 grants. The number of worth-while scholarships is relatively small.

The Ford Foundation and Carnegie Corporation of New York have undertaken to finance the activity for a ten-year period by grants totaling $2,500,000 for its *administrative expenses*. For a basic continuing scholarship program, the Ford Foundation has appropriated $10,000,000 payable

at the rate of $1,000,000 a year for ten years, and is prepared to finance additional scholarships up to a total of $8,000,000 to match scholarships which may be contributed from industry. Some sixty sponsors now back the program financially.

The CASSA investigation will seek to determine whether or not the benefits from the National Merit Scholarship program are great enough to justify participation by California students.

One interesting feature of the National Merit Scholarship program that will be given careful scrutiny is the feature of establishing different "cut-off" scores for qualifying scholarship winners. Students from North Carolina and West Virginia could qualify with a score of 134 in 1958–59, while students from California had to have a score of 144 to qualify. This type of discrimination pattern is applied nation-wide.

CASSA is not opposed to scholarship programs, but it is opposed to exploitation of young people and school districts, and the type of misunderstandings that are created in the public mind by some programs.

50,000 POTENTIAL COLLEGE GRADUATES QUIT HIGH SCHOOL EACH YEAR

The high school drop-out—long regarded as a problem child in American education—is the subject of a recent study conducted by Glen Stice, ETS Research Associate, with support from the Carnegie Corporation of New York.

Dr. Stice reports that each year roughly 50,000 students with sufficient ability to graduate from college do not even finish their high school education.

To get a better picture of the high school drop-out, Dr. Stice tracked down a nationally representative sample of 9,500 high school students, 98 per cent of the group that had participated in an earlier study sponsored by the National Science Foundation and the College Board.

When the 9,500 sophomores are divided into three groups, according to scores on an academic ability test, roughly 90 per cent of those in the high scoring third, 80 per cent of those in the middle third, and 70 per cent of those in the lowest third had graduated five years later.

"Graduation from high school," Dr. Stice said, "is affected by the parent's occupation and education, by the educational orientation of the peer group, and by the student's high school curriculum. In addition, community size and regional differences also seem to be involved."

Some of Dr. Stice's results may be summarized as follows:

—High-aptitude students in a southern school are far less likely to graduate than are students of similar aptitude in other parts of the country. "If the drop-out rate in the South (about 14 per cent) could be brought down to the level of the Midwest (about 6 per cent)," said Dr. Stice, "the over-all loss of potential high level talent would be cut from 50,000 to about 30,000 a year."

—Educational Testing Service Development, January 1960

SYMPOSIUM

The Constructive Use of Teachers' Talents

The symposium this month lies close to the heart of the matter of strengthening the educational system. In a period when teachers are in short supply it is especially important not to waste their talents. During the past few years powerful and creative forces have been at work which promise to move American education forward. The symposium reports upon the application of some of these ideas in schools. While these developments are encouraging, we are compelled to sound a word of warning (see Editorial) lest the full advantage of these ventures be lost. We are again indebted, as in the instance of the symposium of March 1960, to Dwight W. Allen, Research Associate and Lecturer in Education, Stanford University, and Robert B. Moore, Associate Director, Commission on the Experimental Utilization of Staff of the National Association of Secondary School Principals, for their contribution, not only in developing and coordinating the symposium but also for writing the lead article.

TALENTS, TIME, TASKS, AND TEACHERS

BY DWIGHT W. ALLEN* AND ROBERT B. MOORE**

In the National Museum in Athens there is a bronze statue which lay on the bottom of the sea for approximately two thousand years before it was brought up by a Greek fisherman. Experts still debate whether this statue, which shows a man with arm flung back, with a hole in his palm where some instrument was placed, is a statue of Zeus preparing to hurl a thunderbolt, or a statue of Poseidon, Greek god of the sea, with his trident.

Unfortunately today, as we walk from classroom to classroom in a typical secondary school, we see class after class with the same routine, the same schedule, the same number of students; and without extended observation, experts would have difficulty identifying the particular talents of these teachers as they uniformly proceed through an easily predictable routine. There is little indeed to distinguish one from the other.

There is additional irony in this situation, for it is only as we are thousands of years removed that we have difficulty in identifying the difference between Zeus and Poseidon. Even the gods on Olympus, with all their wisdom (and foibles!) recognized the fact that they were not generalists. To Hermes went the task of being the messenger, for he was the swiftest of the gods; Apollo kept the schedule straight; and Pluto took care of the discipline problems! The gods were all specialists.

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Teachers have typically sought to go the gods one better. Not content with being specialists, teachers have instead tried to be all things to all students, and this has been *expected* of them.

The constructive use of teachers' talents—what does this involve? What are some of the important aspects of teachers' talents? Team teaching is an indispensable ingredient. The use of teaching assistants is important to consider. The establishment of instructional materials centers certainly affects the use of teachers' talents. Proper integration of teaching machines into classroom routines is important, as well as the acquisition of mechanical assistance for administrative functions which have been plaguing teachers for a long time. Proposals for utilizing teachers' talents on an annual basis should be investigated so that "moonlighting" functions which are undertaken at the expense of professional contribution as a financial expedient can be more realistically discouraged.

Audio-visual aids are an important adjunct to the use of a teacher's talent, particularly those aids which are at the forefront of rethinking the teacher role. Three aspects are discussed in this symposium: the use of television in teaching, the use of the overhead projector (particularly relevant to varying class size), and the use of radio and taped presentations.

There has been much discussion about the extension of the school year for students, and, as one alternative to the use of teachers' time during the summer outside the profession, the summer high school provides a means for the additional use of the teachers' talents. In the summer high school, there is usually a higher correlation between the subject for which the teacher is trained and the subject which the teacher actually teaches, than there is during the regular school year. Proportionately, there is also less time taken by a formalized routine, and differences in the instructional pattern encourage experimentation.

All of these things, we felt, bear consideration. The contributors to this symposium run the gamut of school positions—superintendents, coordinators, principals, teachers, librarians, technicians, and college professors. The enthusiastic response we got from them is an indication of the exctiing promise of new horizons in the constructive use of teacher talent.

Two basic issues underlie all of these topics. First is the differentiation between truly professional types of activities, and those which are semi- or quasi-professional. Secondly, there is a distinction between different kinds of professional activity. Some teachers are more effective than others in explaining subject matter. Some teachers are more effective in making use of electronic and mechanical aids. Some teachers enjoy collecting resource materials, other teachers enjoy their presentation.

In this symposium we investigate both types of differentiated tasks. We are presenting a number of programs which are successful because they make use of differentiated talents. We are seeking keys to the constructive use of teachers' talents: more time for some responsibilities, less time for others. More time to plan, more time to prepare, more time to present appropriate materials, and more time to evaluate the materials which have

been presented. Less time for formalized routine, less time spent in the maintenance of decorum, less time in the supervision of rote learning which can perhaps be done better by teaching machines, less time for tasks better accomplished by machine-accounting procedures, less time in nonprofessional supervision, and less time in the performance of tasks better done by semi-professional teaching assistants.

While the various administrative tasks connected with the operation of a school must be performed effectively, capable teachers are often ineffective in performing these routines. Testimony to this fact is the time in faculty meetings devoted to such things as the various requirements for attendance accounting and the accounting for tardies and absence slips. Yet, as generalists, teachers are expected to perform these tasks, and indeed, do not succeed as teachers unless they can perform them adequately.

There must be more time to plan, to prepare, to present materials, and to evaluate. There must be less time devoted to formalized routines, nonprofessional supervision, and the like. But what should the teacher do if more time for planning and preparation were allotted, and who should take care of these less professional functions?

The articles included have been selected to demonstrate how teachers can be given more time for diversified professional functions, and to present methods devised to substitute other personnel, or electronic and mechanical aids for the assumption of more routine functions. Included are machine-accounting procedures, machines that can assume some of the rote teaching burden, machines that can do some basic evaluation and indicate what, and how well, students know. Machines cannot replace teachers but machines can lead to a more judicious use of a teacher's time. The public cannot be expected to provide higher salaries, better working conditions and finer facilities, electronic aids, and professional status without the assurance that these will ensure a significant difference in the education of their children.

There is evidence that it does make a difference. One example, reported in the symposium was that when teachers were given an extended time for preparation and evaluation they found substantial material that they had been covering in their classes which was already known to their students. Applying time to the analysis of materials they were dealing with, they discovered a more effective means of covering the material, pinpointed areas which could be treated quite superficially and areas which, because of a lack of familiarity, needed to be dealt with in greater depth: hence, more efficient use of teacher time, more efficient classroom presentation, and more efficient learning on the part of the students.

Tasks of teachers have not been catalogued in order of their importance. Teachers have an apprehension that they spend an inordinate amount of time on tasks relatively wasteful of their talents and their training. Little has been done positively to identify the organization of a school which would maximize the use of these talents and the time available to teachers to perform appropriate professional tasks.

Team teaching is central to the concept of teacher specialization. It should be recognized, however, that there is no such thing as *Team Teaching* with capital T's, for team teaching implies no single way of proceeding. Team teaching is rather a generic way of looking at the specialization of teaching talents. In the February symposium several projects involving team teaching were reported. In this symposium another specific example of team teaching which is quite different is given.

Team teaching does involve a different concept of teacher load. Traditionally the top-notch teacher is given direct responsibility for the fewest number of students, because this teacher is typically the department head. He may be given curricular responsibility or administrative tasks, which reduce direct contact with students. Some current proposals suggest that the number of students seen by any one teacher during the course of a semester be even further reduced. This is probably due to the assumption traditionally made that routine tasks must all be performed by this same outstanding teacher.

Through the concept of team teaching, top quality teachers who possess talents that have been specifically identified are given the responsibility for a larger number of students, though the responsibility is quite different from that in the thirty-a-time, an-hour-a-day, five-day-a-week traditional pattern.

An outstanding teacher should logically contact as many students as possible and be relieved of duties which are extraneous to the utilization of the outstanding talents this teacher possesses. Ancillary to a team-teaching approach are such things as vacation employment, the establishment and use of instructional material centers, the elimination of repetitive classroom presentations, and class size more nearly tailored to instructional needs, all of which tend to utilize teaching talent more effectively.

Teacher specialization involves changed behavior on the part of many faculty members—for, when teaching tasks are catalogued, and then arranged in order of relative importance, many teachers, now as generalists, will find that the tasks consuming the most time may be those tasks which logically should be delegated to a teaching aid, a clerical assistant, or a teaching machine.

On the other hand, as a specialist, the teacher finds he can and must spend more time than he previously could and did on those remaining, difficult, highly professional tasks. Without exception, articles in this symposium report that teachers find their new role as specialist is rewarding, for resulting from this changed work load and changed responsibilities has been increased student response and understanding.

Maybe there was a time when the Grecian gods on Mount Olympus did try to be generalists—that is, all things to all people. The early accounts of Homer are a little vague in the assignment of the duties to each deity on the Grecian team. If such was the case, the change from generalists to specialists was most likely somewhat difficult there too! Even the gods found little satisfaction in trying to be all things to all people!

EIGHTH GRADE TEAM TEACHING AT THE ROOSEVELT JUNIOR HIGH SCHOOL

BY LAWRELL JENSEN,* WANDA B. RIGGLE,† PHILIP MERKLEY,§ VIRGINIA NIELSEN,§ AND RHODA RUDY§

Does team teaching provide for better utilization of the time and competences of teachers? Both objective evidence as well as teacher opinion indicate that it does according to a study conducted at the Roosevelt Junior High School in Roosevelt, Utah.

An experiment in team teaching, financed through a grant from the Fund for the Advancement of Education beginning in 1958, was conducted under the auspices of the National and Utah Secondary School Principals' Association and the Utah Central Research Committee. The study is currently in its second year of operation.

The Roosevelt Junior High School serves a rural area of about four hundred square miles. More than half of the students are transported from neighboring communities and farmsteads. The school has a student body of approximately three hundred, a faculty of twelve teachers, and utilizes a six-period day.

Organization of the Study

In its final form the experiment was structured to determine whether team teaching would (1) better meet the needs of pupils, (2) more effectively utilize the time and competences of teachers, (3) provide for the use of improved instructional materials and equipment, and (4) better utilize school buildings. The experiment was conducted at the eighth grade in

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§ Classroom teachers, Roosevelt Junior High School.

the subjects of English and United States history. All four sections of the eighth grade were scheduled to meet for two consecutive periods for instruction in these two subjects. Instruction periods were followed by a planning period for team members. The team included four classroom teachers, the librarian, and the principal.

At a two-week pre-school workshop team members met with a university consultant and made what preparations were possible for the project within the limits of time and information available. Appropriate audio-visual materials were previewed and selected. Students were divided into four relatively homogeneous sections using the criteria of mental ability, scholastic achievement, and teacher evaluation. This portion of the workshop also oriented the teaching team to the process of working together as a cooperative group rather than working as individuals.

All units which were organized in the workshop were written up later according to a standard format which was agreed upon in cooperation with the project consultant.

The remainder of the teaching units were organized and written during the scheduled planning periods well in advance of the times they were to be used. After exploratory group discussions, individual responsibilities for the writing of units were delegated to team members according to specialization and time available. All the units and supporting teaching aids were catalogued and filed for future use.

After the units were written, the librarian prepared a daily schedule of teacher assignments. This schedule indicated daily lessons for the two periods, whether those lessons were to be taught in large or small groups, and by whom the lessons were to be taught. This schedule was prepared sufficiently in advance so that necessary audio-visual materials might be ordered or prepared.

The planning period was further used by teachers to prepare for special teaching duties and for general preparation as required for the entire program. A unique feature of the experiment proved to be the high degree of cooperation among the members of the teaching team. The teacher time saved by large-group instruction was utilized for the preparation of assignments which involved special teacher competences.

Unit Activities

The teaching-learning procedures of each unit fell into three categories: initiatory, developmental, and culminating activities. The initiatory activities were used to motivate and stimulate students. The developmental activities comprised the main body of the teaching; the bulk of information fell into this category. The culminating activities included reviews and completed the learning of the desired concepts.

The types of teaching activities which contributed to the success of the project were:

1. Modified lecture techniques which utilized note taking by students in outline form.
2. Pupil summaries.
3. Quick quizzes following an outline form to motivate listening.
4. Map studies using:
   a. cell overlays in connection with the overhead projector.
   b. individual blank maps for students with master copies drawn on maps inserted in large acetate pockets. (All students had colored pencils to facilitate map work.)
5. Audio-visual materials such as films, tapes, records, and film strips. (All such aids were previewed by the teacher responsible for the presentation who then introduced them to the students, indicating the subject matter, point of emphasis, and special features to observe. These aids were usually concluded with oral discussions or quick quizzes.)
6. Pictures for use on the opaque projector.
7. Student participation in large-group situations. (Assignments were made far enough in advance to insure adequate preparation. Each individual assignment was made according to the interest and ability, and the talent of the student. Student participation involved such areas as role playing, singing, radio plays, panel discussions, choral reading, and reports.)
8. Conventional teaching techniques normally used in classroom.

The teaching team had available for use an opaque projector, an overhead projector, a 16mm movie projector, a film-strip projector, a three-speed record player, a tape recorder, and a public address system.

Grouping and Testing Procedures

In order to measure objectively certain aspects of the experiment, tests were given. The eighth-grade students of the three other schools in the same district were used as control groups. Data from all tests given to the eighth grade at the beginning and end of the school year were tabulated. The results were utilized to determine the gains or losses in language arts and United States history.

The experimental homogeneous groups were set up from scores on the Otis Quick Scoring Mental Abilities Test, 1956, and the S.R.A. Achievement Series, 1957. These same tests were used in setting up the matched groups from the control schools. Comparison of achievement gains in the academic subjects of the experimental and control classes were made from these matched groups.

Several tests and evaluational devices were used as follows:

1. Language arts and history were measured by the California Achievement Test Battery and the publisher's comprehensive end-of-year test which accompanied the textbook used in history.
2. The reaction of members of the teaching team and pupils and the community was determined through structured interviews and attitudinal scales administered by trained State and university personnel.
3. Sociograms were used to determine social interactions within the experimental groups.
4. Use of teacher time was measured by a day-book record of teacher duties.
5. Use of teacher competences was determined from a record of special duties and assignments kept by the principal and teachers.

All of the statistical data for the testing program were interpreted and processed by a qualified university consultant with special training in this field.

The accompanying table shows the academic achievements of the respective matched groups. The following summary statements are drawn from Table 1.

a. The combined experimental group achieved higher mean gain scores in the areas of history and total language arts.

b. Several points are worthy of mention with respect to the matched sub-groups. Of the accelerated groups, the two experimental groups achieved higher mean gains in history. Experimental group C achieved significantly higher mean gain scores in both language and history. The two retarded groups showed results somewhat in reverse to the general trend.

c. The results throughout indicated that there was a significant correlation between IQ scores and gain scores thus necessitating the need for matching the sub-groups according to IQ mean scores.

d. Taking into consideration the limitations of the study, the general trend appears to favor the experimental group in the amount of mean gain on the achievement tests. When the combined experimental and control groups were compared, the experimental group achieved the greatest mean gains in history and language arts.

On the basis of the assembled test data it may be concluded that the educational achievements of students in the combined experimental groups who were taught by teachers working as a team employing carefully planned procedures and devices, exceeded the educational achievements

TABLE 1

COMPARISON OF MEAN GAIN SCORES BETWEEN MATCHED GROUPS

Tests	Experimental Group	Control Group	Difference Between Mean Gains
	Group A IQ 100.26	Group A IQ 101.72	
History	14.96	9.00	5.96
Language	11.61	8.24	3.91
	Group B IQ 102.07	Group B IQ 101.72	
History	13.52	9.00	4.52
Language	12.15	8.24	3.91
	Group C IQ 82.81	Group C IQ 83.79	
History	13.48	6.47	7.01
Language	14.71	4.26	10.45
	Group D IQ 69.80	Group D IQ 71.38	
History	4.27	8.76	—4.49
Language	11.67	10.67	1.00

of students in the combined control groups who were taught according to traditional procedures.

At the inception of the project it was postulated that students might suffer socially through large-group instruction and grouping procedures. However, a sociometric device was administered which showed no statistically significant gains or losses.

An attitudinal questionnaire and structured interviews were administered to the pupils, other faculty members, and parents in October 1958 to determine the attitude of the various groups toward the experimental program. The same form was administered again in May 1959 to determine changes in attitude toward the program after its first year of operation. Responses by all to the attitudinal questionnaire and interviews revealed a high degree of interest and support of the experimental program.

Time Utilization

Chart 1 shows how teacher time was utilized during the study. The basis of the chart is the teaching period. The teaching period is defined as a fifty-five minute period spent by a teacher teaching a conventional class. The study included a total of 1,416 teaching periods (the number of teaching periods multiplied by the number of teachers on the team multiplied by the number of days in the school year.)

CHART 1 DISTRIBUTION OF TEACHER TIME

44.91% (636 PERIODS OF TEACHING TIME IN CLASSROOMS. THIS INCLUDES 47 PERIODS SPENT IN LIBRARY).

24.90% (351 PERIODS OF TEACHER TIME SAVED.)

24.09% (341 PERIODS SPENT IN LARGE-GROUP INSTRUCTION.)

3.96% (56 PERIODS USED IN OTHER WAYS—ASSEMBLIES, ETC.)

2.24% (32 PERIODS USED IN TESTING.)

CHART 2 DISTRIBUTION OF STUDENT TIME

44.91% (636 CLASSES IN SMALL GROUPS OTHER THAN IN THE LIBRARY.)

40.18% (569 CLASSES IN LARGE-GROUP INSTRUCTION.)

11.59% (164 PERIODS USED IN INSTRUCTION—ASSEMBLIES, TESTING, OTHER ACTIVITIES.)

3.32% (47 SMALL GROUP PERIODS IN LIBRARY.)

The program has aroused public interest and favorable attention. Exceptionally high attendance has been apparent at the public meetings held for the purpose of reporting the program. Meetings have been planned both for lay people and for professional educators. Participants in the study have been asked many questions. From the experiences during the initial year of the project, from test results, and from evidence being accumulated during the second year of the experiment, the team participants have drawn the following conclusions:

1. The team-teaching technique permits added time for:
   a. better preparation of materials such as individual lessons, lectures, and presentations.

b. the making of special audio-visual materials.
c. previewing films, tapes, and records.
d. the team teachers to gain added confidence in subject areas.
e. the desirable exchange of ideas.

2. The use of large-group presentation of films, tapes, and other audio-visual aids provides more economical use of equipment, building facilities, and teacher time.
3. Many of the enrichment materials that are included in the project could not ordinarily be presented since time in the normal school day does not permit the typical teacher sufficient time for their preparation.
4. The special interest areas of teachers can be utilized to the advantage of both pupil and teacher. A well-rounded program results when distinctive interests and talents of each teacher are utilized for large-group presentations. Where conventional procedures are employed students are not exposed to the best of several teachers in the same subject area.
5. Contrary to the expectations of team teachers, discipline has not been a problem in the large-group situation. This has undoubtedly been due to the high interest content of the material presented, the varied methods of presentation, and the improvement in the quality of the presentation by the teacher.
6. Individual participation in the large-group situations provides the students special prestige and encourages work of higher quality. Students vie for the privilege of large-group presentations.
7. Students enjoy contact with the different personalities of the teachers.
8. Team-teaching techniques are better suited to some areas of subject matter than to others.
9. The flexibiilty of the scheduling of building space and facilities according to the immediate needs is preferable but not absolutely essential.
10. The team-teaching technique will not change the pupil-teacher ratio.
11. The planning period and released time definitely do not provide leisure time.
12. Team teaching will not cut down on the amount of preparation necessary for each individual team member.
13. The experiment as conducted in the Roosevelt Junior High School seems to encourage and promote higher scholastic attainment among the accelerated students.

14. The program meets the needs of the retarded student on his own level through homogeneous grouping by providing satisfaction to both pupil and teacher.
15. Although the retarded group showed less gain in the experimental area than the control group, these students were still achieving higher than their expected ability.
16. Homogeneous grouping, as used in this program, has presented no problems of social stigma, lack of leadership, or parental objections.
17. Homogeneous grouping causes accelerated students to face challenges not usually met in conventional classrooms. These students have been encouraged to accept new challenges by meeting scholastic strides and ideas of their intellectual peers.
18. The program has given a better feeling of professionalism and personal satisfaction to participating teachers.

At the end of the first project year the team members of the Roosevelt Junior High School preferred the team techniques to the traditional organization. This opinion stemmed from the realization of the superior preparation made possible through group planning and utilization of the collective time and talents of the team. The mass-teaching techniques appeared to team members to have unusual possibilities wherever large groups are taught. Areas exist in almost every subject-matter field that can be effectively taught in large groups; however, nearly every subject field requires teachers to give students individual attention. The team-teaching technique, as employed in this study, suggests procedures for using large-group instruction to effect an economy of time, and better utilization of buildings and materials, while at the same time meeting the individual instructional needs of children.

A second-year experimental program is currently being conducted. At the mid-year point the findings of the first year are being substantiated. Many improvements in teaching and planning techniques have been initiated. Other members of the school faculty have adopted certain features of team teaching in their subject-matter fields. They are expressing enthusiasm for this type of teaching, as do the experimental team members.

TEAM TEACHING IN WORLD GEOGRAPHY—JUNIOR HIGH SCHOOL

BY JOHN M. STEVENS* AND A. WINSTON RICHARDS**

Team teaching of a one-semester, ninth-grade, world geography course was begun in the fall of 1959 at Bancroft Junior High School, San Leandro, California.

The team consists of two social studies teachers, the school librarian, and an art teacher/audio-visual coordinator. On the para-professional level, the assistant librarian (noncertificated) has helped prepare material, but is not regularly assigned to the course. There are no other para-professionals involved, and no additional clerical help has been used.

The most successful part of this experiment has been the use of large-group instruction, two or three periods a week. At these times two classes meet together in the choral room. This room seats up to 120, is sound-proof, air-conditioned, and has better than average facilities for the use of audio-visual materials.

Films, filmstrips, overhead projections, and guest lecturers have been used in large-group presentations. Work sheets covering the main points of the films and filmstrips have been prepared in advance and given to the students as they entered the class. Talks by guest lecturers were tape recorded and used in other classes.

The advantages of large-group instruction have been:

1. One teacher can be free to plan future presentations while the other teacher takes charge of the entire group. This has given each of the two social studies teachers one to two extra hours of planning time per week.

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2. Because of the variety of presentations, and greater preparation possible for large-group instruction, the interest of these classes has appeared to be greater than with regular classes in the same subject.
3. Visiting speakers are more willing to come to speak to seventy than to thirty-five students; as a result some outstanding resource people have participated in the program.

Certain other of the basic concepts expressed in "*Images of the Future*" have not yet been fully explored. For example, small-group discussions have been utilized infrequently because of the difficulty in securing sufficient adults to participate in the program. Therefore, we do not know the values that may accrue when this part of team teaching is used. On the other hand, there is no valid reason to believe the small-group program will not work if the personnel problem is solved.

A "research" day has been used on a number of occasions. In this situation, students were free to work on individual assignments, utilizing the library, standard classrooms, or the crafts facilities where appropriate. Following the attendance check, pupils could go where they wished without passes, and the team teachers were available for consultation as needed.

It appears that this technique will produce satisfactory results at the ninth-grade level where capable, highly motivated students are concerned. Although discipline problems did not develop, it is true that many "average" pupils failed to utilize their time to best advantage.

As a result of our brief experience with the experiment, it seems evident that the team approach to teaching has much to offer. Further experience with the program should produce refinements which will increase its value to the students involved.

TEACHING ASSISTANTS

BY HAROLD F. GRAY, AND CARL T. FYNBOE*

Education today is challenged as never before. The mushrooming of knowledge, unprecedented advances in scientific and technical fields, explosive space-age developments, mobile populations, and new methods of mass communication all call for new and better ways of educating youth. Efforts of educators and public alike must be focused on developing each individual to his fullest potential for a rich, creative life. To meet the challenge, the administrator, as a facilitator of the instructional program, must seek new ways to increase the effectiveness of teachers in the classroom. One such way is through better utilization of the professional staff.

Clover Park High School, with an enrollment of nearly two thousand students, located in the heart of a fast-growing suburban residential community south of Tacoma, Washington, has employed a number of old and new methods to enable the classroom teacher to do a better job. The one to be discussed in this article is the use of teacher assistants to perform some of the mechanical duties of the classroom teacher and thereby relieve him of some nonprofessional responsibilities.

The use of teaching assistants is in its second year at Clover Park. During the 1958–59 school year three part-time aides were employed—two in English and one in mathematics. The nature of their duties varied with the subject and type of material under study or assignment. During the current school year two assistants were added in chemistry. After a study of the relative advantages and disadvantages, the administrators and teachers involved agree that the use of assistants has been successful and should be extended to other subject areas as finances permit.

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Mathematics Assistant

The head of the Mathematics Department, a superior classroom teacher, teaches a full schedule—five periods and one planning period per day. Since her over-all teaching load had to be reduced, there were two choices: (1) relieve her of one or two classes, or (2) remove some of the time-consuming routine mechanical functions. The assistant selected to serve the department was a former mathematics teacher who, as a housewife and mother, did not wish to assume a full teaching load but was willing to work part-time as an assistant.

The duties of the assistant consisted of duplicating tests and other materials for the teachers in the department as well as correcting daily assignments, recording grades, and performing other departmental duties assigned by the department head. During the two years, she has been employed from twelve to fifteen hours per week.

English Assistants

During the first year two students from the two liberal arts colleges located in the immediate area were selected to serve as assistants in the English Department. They were recommended by their respective colleges as possessing the ability and competences required for this assignment. Both plan to become English teachers upon completion of their college work. The competences desired were (1) a thorough knowledge of grammar and the mechanics of writing, (2) an understanding of organization and logical development of composition, and (3) a feeling for style and usage.

The duties of the English assistants consisted of correcting papers for members of the department, including tests, vocabulary notebooks, research papers, weekly themes, and précis. Their services were available for thirty hours per week. The exact time fluctuated from week to week according to the needs of the department and the available time of the assistants.

This year one of the assistants from the colleges continued in her assignment. Because of graduation from college on the part of the other assistant, a housewife with a major in English who earned her degree in an Eastern college was employed.

Chemistry Assistants

This year Clover Park's two chemistry teachers are assisted by two college students majoring in chemistry. Chemistry classes in our school meet seven periods per week, with each teacher assigned four sections. This eliminates a daily planning period for the chemistry teachers.

To relieve the burden, the chemistry assistants, each averaging five hours per week, assume the major responsibility for correcting and grading tests, daily work, experiment data, and reports.

Remuneration

The remuneration of assistants, depending on the qualifications and nature of the work assigned, ranges from $1.50 to $2.25 per hour.

Evaluation

The utilization of teacher assistants has been successful. Teachers with the services of an assistant have been relieved of time-consuming mechanical and clerical functions. Such relief has increased the effectiveness of the teacher and has improved instruction. The teacher now finds additional time for class preparation, planning, and research. Teaching assistants agree that the experience is valuable for them. One of the English assistants residing in the community commented that she is greatly rewarded by the contribution she is making to relieve the load of the classroom teachers with whom she has worked. Statements by teachers and assistants point out that a substantial improvement has been noted in the skill of composition writing, principally due to the increased number of themes that could be assigned and corrected.

Perhaps one of the most significant advantages of the program is the improvement in teacher morale. One teacher in her evaluation wondered how she had ever handled the load prior to the employment of assistants. She stated: "The pressure of doing papers at home, night after night, or letting them pile up until frustration set in, has been removed to a great extent. There is some time left for normal living."

Another remarked: "Lightening the burden of paper work in itself is a desirable outcome, for it brings release from pressure, a happier out-of-school life, and therefore a happier and more efficient teacher. There is more time for planning and perfecting assignments as well as greater opportunity to give students experience in writing."

Teachers generally commented that there was a physical and mental improvement on the part of the teacher relieved from the clerical functions which could just as adequately be handled by an assistant. On the negative side, a mathematics teacher observed that she was not able to do as much teaching based on criticism of papers as when she graded the papers herself.

Future Plans

The use of teaching assistants will probably expand into other areas in the next few years at Clover Park. There is every indication that this plan has effectively improved the instructional quality as well as the morale and well-being of the classroom teacher in the areas where it has been tried. It is thought that laboratory assistants could profitably be employed in both the biological and physical sciences classes. Social studies teachers have not heretofore been included in this program, but it would appear that there are comparable advantages in this area. Present teaching loads

preclude additional work in historiography or the critical analyses of historical works. Teachers wishing to use essay-type examinations find that the time required adequately to correct and grade them prohibits widespread employment of this type of test.

Since many schools find that more than the average number of students can be effectively taught in a typing class, assistance in the correction of typing papers would make larger classes acceptable to the individual teacher.

Conclusion

Under favorable circumstances the utilization of teaching assistants should be profitable in most high schools. It is important that the teacher be enthusiastic about the additional aid. Assistance should be provided only to those who desire it. Assistants should have the basic qualifications and training in the areas to which they are assigned. Adequate instructions and communication between the teacher and the assistant are mandatory for maximum success. Even in areas in which upper division or graduate college students are not available, there are usually persons in the community who are qualified to serve as teaching assistants.

For the administrator who is interested in improving the quality of instruction and aiding the teaching staff in doing the best professional job, the use of teaching assistants is recommended. Providing relief from mechanical and clerical functions allows the classroom teacher to be more creative, more effective, and better able to meet the demands of a quality program for each and every student.

EDUCATIONAL T.V. DANGEROUS?

To say that television can be badly used is to say no more than that sharp knives cut and that fire burns. We do not give up hammers because the careless user hits his thumb with them. We shall use television unwisely if we pretend that it will save money for the taxpayers by enabling us to get along with fewer teachers. It will not replace the teacher, but it will help him to do a better job.—*Edgar Dale*, Ohio State University.

—Education Digest, December 1959

THE INSTRUCTIONAL MATERIALS CENTER AS A MEANS FOR CONSTRUCTIVE USE OF TEACHERS' TALENTS

BY A. N. POSNER*

In May 1958 the Torrance Unified School District built and opened a new facility, the Educational Materials Building. The major purposes of this facility are:

1. To house centrally all secondary and elementary audio-visual teaching aids such as filmstrips, slides, tape recordings, records, and models;
2. To provide a location for encouraging professional growth of all teachers;
3. To serve as a center for improving the instructional program.

A conference room has been provided in this facility for teachers' curriculum workshops, administrators' meetings, curriculum coordinators' meetings, and extension courses offered by the University of Southern California and the University of California at Los Angeles. Space is available in the conference room for publishers' samples, and it is possible for textbook selection committees from secondary and elementary schools to review, evaluate, and recommend new and current classroom publications.

A small and well-equipped curriculum materials workroom, complete with a variety of construction materials and art supplies, is available to all staff members. Teachers use the workroom to construct instructional aids for pupils. They may also see sample kits of seat work and independent

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activity aids which have been prepared by district personnel. These materials are available for all levels.

This building has become known as the "Supermarket of Knowledge," because it is used by teachers and administrators in a manner similar to that in which a housewife shops for groceries in a typical modern supermarket. Large wheeled supermarket baskets are available, and teachers may circulate freely through the supplementary textbook stacks and select materials at any and all grade levels. No restriction is placed on grade-level selection of materials. Teachers choose items which help to meet the individual needs and interests of students.

The building is supervised by an educational materials administrator and three curriculum librarians, all of whom were formerly successful classroom teachers in the Torrance School District. They were selected for their assignments primarily on the basis of demonstrated competence in the successful use of educational materials in the classroom. The possession of technical librarianship skills was not a deciding factor in their appointment. It was the intent of those who developed the centralized Educational Materials Building to have a professional staff who could assist teachers in the effective utilization of all teaching aids.

Many constructive activities which utilize the professional talents of teachers are conducted in the Educational Materials Building. A continuous display of promising practices, projects, ideas, and materials is always available for viewing by teachers. This facility permits teachers to share teaching practices and to exchange ideas which enhance and promote a dynamic pattern of classroom instruction.

In another section of the building an attractive professional library is maintained for use by teachers and other members of the certificated staff. The professional library contains approximately two thousand titles as well as fifty different periodicals. Considerable review of research and searching of professional literature are done in this area by teachers and administrators who are attempting to give both breadth and depth to their ideas and classroom practices.

The Educational Materials Building is open and available to teachers from 8 a.m. to 5 p.m., and it is open until 9 p.m. one evening each week.

This facility has become the heart of the school district. It is an idea center and a dynamic aid in promoting the primary objectives of the school district, namely, individualizing instruction for students and promoting the professional growth and knowledge of teachers.

TEACHING MACHINES CAN AID THE SCHOOLS TO MAKE BETTER USE OF TEACHER'S TIME

BY LEWIS D. EIGEN* AND P. KENNETH KOMOSKI**

In 1926, Sidney L. Pressey gave plans for a mechanical device that would test and teach. Pressey stressed the point that, by using modern mechanical means, much of the unprofessional work a teacher is required to perform can be eliminated. In his words, "the average teacher is woefully burdened by routines of drill and information fixing. It would seem highly desirable to lift from her shoulders as much as possible of this burden and make her free for those inspirational and thought-stimulating activities which are, presumably, the real function of the teacher."[1] Pressey's vision of automated methods being used to aid educators was far ahead of his time.

Given Pressey's original idea, the educator of 1960 has at his disposal a practical working realization of Pressey's hope. The development of the teaching machine by B. F. Skinner[2] has now made it possible to teach much of the content of the modern curriculum.

A teaching machine of the Skinner type is a mechanical or electromechanical device which will present a question to a student. The student writes his answer and then is told *immediately* whether he is correct or not by a confirming device. Information is transmitted, via the questions

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[1] Sidney L. Pressey. "A Simple Device Which Gives Tests and Scores and Teaches," *School and Society*, Vol. 23, 1926, pp. 373–76.

[2] B. F. Skinner. "Teaching Machines," *Science*, Vol. 126, pp. 969–77.

themselves, or by means of supplementary "panels." An extremely simple type of teaching machine would be a deck of 4 x 6 index cards with questions on the front side and the correct answers on the back. Another type of teaching machine is the "programed textbook." This "paper teaching machine" presents questions in the proper sequence and has confirming mechanisms available.

The principal advantages to teaching machines are as follows: 1. They are individually paced; that is, each student proceeds at his own pace and thus no student is left behind by a class and no gifted student is held back. 2. Active participation on the part of the learner is required, as opposed to usual classroom teaching where much of the learner's activity is covert. 3. Reinforcement of correct responses is immediate. The student does not wait twenty-four hours or so for his paper to be corrected. 4. Pupil progress may be evaluated by the teacher at any time. Evaluation is not limited to separate testing.

The teaching machine is somewhat analogous to the binding of a book. The success of this type of book depends not so much on the binding as it does on the pages on the inside. Effective use, or misuse, of the teaching machine depends upon its *program.*

The teaching machine may be used not only to teach and drill rote materials, but also conceptual materials of a highly abstract nature. At the Collegiate School Automated Teaching Project, eighth graders have learned some topics in "modern mathematics" by means of automated teaching devices. Essentially this program[3] covers the topics recommended in the booklet, *Sets, Functions and Relations*, published by the College Entrance Examination Board Commission on Mathematics. Materials in arithmetic, spelling, and French have also been used by this project. Topics which have been programed elsewhere are German, statistics, mathematical logic, genetics, and English grammar. For the past three years, Harvard University has been teaching its elementary psychology course with the aid of teaching machines.

Not all material can be taught via teaching machines. That which cannot be programed is precisely the material presenting the greatest challenge for teachers. While grammar and spelling might be easily programed, teaching children to write well must be done by the teacher. Thus, much more constructive use of the teacher can be made by utilizing teaching machines. Correcting workbooks and homework assignments will be eliminated as a teacher's task. Much teaching can be done by the machine, leaving the teacher free to do that creative, essential job which only a human being can perform. The English teacher can concentrate his

[3] Lewis D. Eigen. *Sets, Functions and Relations.* New York: Collegiate School Automated Teaching Project, New York, New York.

time on the teaching of fine writing rather than on grammar, spelling, and punctuation. A mathematics teacher can walk into a classroom confident that the students already have learned the definitions and preliminary concepts. His task is now one of pointing out the exciting interrelationships of these concepts and their relation to the world about us. He now has much time to stimulate creative thinking and to handle such topics as mathematical proof with the full knowledge that the relationships of the concepts about which the students are to prove things are fully understood.

Automated teaching methods are highly efficient. The Project has demonstrated that topics can be covered in one half the usual time, often even less. With the ever expanding body of man's knowledge, the schools are challenged with having education keep pace with the rapid expansion of the frontiers of knowledge.

Through automated teaching, increased efficiency will enable teachers to have more time to partake in curriculum development which may well include the writing of programs for teaching machines.

Some educators understandably fear that automation will replace the teacher. While it is true that automation may replace a poor teacher, any teacher who can be replaced by a machine certainly deserves to be replaced. Fortunately, American schools have a plethora of teachers who could not possibly be replaced by machines. With automated teaching devices, these teachers can make their most constructive contributions to education by utilizing their time in that for which their training, knowledge, and talent best equip them. Teachers can spend their working day engaged in constructive, efficient educational activity.

Teaching machines, or more correctly automated teaching, at present represent a method without a philosophy of application. If the results of future research further substantiate results of current experiments as to the great effectiveness of this method, much thoughtful consideration will need to be given to what such a philosophy of application should be. We must realize that the all important question of how automated teaching should be used is the question which education in this country will answer by its actions during the next decade. If automated teaching is used thoughtlessly and with shortsightedness, putting faith in "hardware" rather than in the *hard work* of programing, its great potential can never be realized.

MECHANICAL AIDS FOR TEACHERS

BY CHARLES C. HOLT*

The age of electronics has introduced many new procedures adaptable not only to business operations but also for the use of school systems. The records and reports kept by individual schools come to extremely large numbers. Attendance reports, report cards, permanent records, school censuses, etc., take up many hours of teacher, administrator, and clerical personnel time.

Mechanical aids now being used for carrying on such tasks as those mentioned above are, to be sure, important steps forward in the operation of schools. Teachers are employed to teach and administrators to supervise the various aspects of instruction and administration. The reduction of the amount of time that teachers and administrators must spend doing simple routine clerical tasks is something which school administrators have long dreamed of.

Although the chief concern of this article will be procedures with which teachers are directly concerned, other processes being improved by use of mechanical aids are payroll, accounting procedures, bid lists, the posting of pupil personnel records, transcripts, and educational and psychological research.

Basic to the successful use of mechanical aids is the ability to offer more services to teachers, such as: a) program cards for distribution to classroom and homeroom teachers, counselors, and attendance clerks; b) class lists and homeroom lists printed and ready for teachers at the start of the semester; c) report cards in as many copies as desired for distribution to students, parents, counselors, homerooms, etc.; d) grade averages and class rank; e) lists of special categories of students for remedial classes,

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honors classes, certain IQ or other test-score disrtibution; f) reports to students of standardized test results on separate punched cards.

Machine cards are also used to assist in the effective control of class size. For example, in Proviso we print twenty-five cards for each section, an additional five bearing one red stripe as a warning that we are approaching the maximum class size, and five with double red stripes to indicate that that particular section is filled.

The over-all objective in using mechanical aids is to increase school efficiency. This is done by:

1. Improving the accuracy of records. The use of machine punch cards can assure the attainment of absolute accuracy, since all cards are prepared from an original.
2. Relieving teachers of the routine clerical functions of attendance. Attendance lists are prepared and automatically recapped.
3. Relieving teachers of the time-consuming task of correlating test data with work in the classroom. Cards with test data may be sorted automatically and classified to achieve many desired results.
4. Providing rapid and more widely disseminated information. The facts one teacher has can be made readily available to everyone in the school or system.
5. Helping counselors reduce time spent in compiling records, thus allowing them more time for guiding and counseling students.
6. Streamlining registration so that conflicts are greatly reduced, if not eliminated.
7. Aiding planning by having more kinds of data readily available as needed.

In the American public school, the time and money spent on such procedures as machines and other mechanical aids must be explained and justified. The common belief that machines will replace teachers and clerks is simply not so. They do, however, perform clerical and other nonteaching tasks for teachers at great speeds. These aids are expensive, but the savings in teacher time, the accuracy of operation, and the greatly increased amount of usable data they turn out easily offset the cost. In these times, when competent teachers are in short supply and schools are overcrowded, any process potentially leading to better staff utilization must be investigated.

THE EXTENDED SCHOOL YEAR FOR TEACHERS TO PLAN AND PREPARE

BY WILLIAM O. NESBITT*

The Need

When teachers and pupils come together to learn, the quality and quantity of preparation on the part of the teacher become startlingly apparent. A teacher's strength is in his preparation. It provides him with seemingly unlimited amounts of descriptive materials. It permits him to adapt his teaching to any class. It allows him to look beyond the unending stream of facts in subject matter to the intellectual, artistic, and scientific whole that the field really is. It increases the frequency of the all-too-few moments when the teacher gets the greatest pleasure from his task.

If the intellectual ingenuity and imagination of teachers are primary, then courageous leadership must provide varied opportunity for optimum use of teacher talents. For years the teaching profession has depended upon the improvement of individual teachers to bring about desired improvement in classroom instruction. Historically, the teacher, upon graduation from the accepted training program, was assumed to be prepared to teach forever. Those who found they were not prepared probably assumed their condition to be unique; therefore a great deal of midnight oil was consumed in an effort to "save face." Between then and now the concept of teaching has changed just as much as, if not more than, the student body with which the teacher had to deal. The amount of preparation necessary for good instruction has led schools to devise ways to schedule a preparation period during the nine months when teachers work with students. That the problem has not been solved by this technique is

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evidenced by the addition of pre-school workshops. Current thinking and action indicate that teachers need to work substantially more on plans and preparations and produce instructional materials in various kinds of group situations as well as individually.

We sometimes hear the statement "Keep on doing whatever you are doing now, but do it twice as well" offered as a solution to problems in education. There is no argument against trying to do a job better, but unless we make teaching more professional—unless, among other things, we change our concept of what is involved in planning for instruction—the teaching profession will be reduced to a harried routine. This statement, strong as it is, will remain true as long as we expect all teachers to teach twenty-five or more periods each week and carry on other routine duties, as long as we fail to recognize individual differences among teachers, and as long as we provide them with minimum (or less!) assistance, both human and material.

Good teachers have always planned their work, and they still do. Many teachers today plan extremely well on a short-term basis; few, however, plan well on a long-range basis. There may be a direct relationship between the kind of planning done and the time available for that planning. That which matters most in education today is what goes on in the classroom. This relates directly to the structure of planning and preparing to teach. Old problems may be solved more efficiently in new ways. New problems created by the rapid pace of worldly change demand new solutions.

The Extended School Year Defined

A world-wide population explosion, combined with the constantly increasing rate at which new knowledge is acquired, have forced educators to look for new ways to improve instruction. Much has been said about the extended school year for students. Some thought has been given to an extended school year for teachers to plan and prepare instructional materials under school supervision at a time when students are not present. This extended school year for teachers might serve very well as an intermediate step between the nine- and twelve-month school year for students.

The organization and length of this time for teachers, beyond the usual nine months, depends upon the needs of the school system. Some schools may find it necessary to designate a specific summer month for teachers to work and plan. Another system may find it advantageous to stagger teacher workshops throughout the summer. Another school system may arrange the time in such a way that teachers can work a few days or a week or more, without students, several times during a twelve-month period. Regardless of the organization and timing of the extended school year, teachers need carefully controlled workshop conditions in order to accom-

plish the kind of planning needed to bring about optimum learning in a modern educational institution.

Some Suggested Uses of the Extended School Year for Teachers

What are some of the kinds of work that can be done in an extended school year for teachers? Again, the criteria to be used in making decisions are to be found in the needs of the school system. Local educational leaders usually identify these needs as they work with instructional problems day by day. But there is another aspect of these needs that is concerned with the direction in which the instructional program is pointed. In some school systems this definition of purpose might be the first thing to be done in time made available by the extended school year for teachers.

A different problem would be posed by a school system sure of its direction but needing time to incorporate changes in the job assignments of teachers. One of these changes, applicable to any type of school, is the team-teaching idea. Anyone who has worked with teacher-teams knows that a great deal of time, assistance, leadership, materials, and human relations go into ensuring the highest performance of a team. All of these ingredients and more are poured into the local football team with good results. Teacher-teams respond even better to expert handling and care.

Teacher-teams need the extended school year for hour after hour of uninterrupted concentration upon immediate and, eventually, long-range problems. The strengths of individual members of the team must be discovered and built into the teaching plans. Time is required for development of new skills and new materials—time which never seems to be available during the regular school year. Individual teachers, as well as members of teams, are constantly in need of a deeper and all-encompassing understanding of the subject they have chosen to teach.

The extended school year for teachers offers the time to bridge the gap between college and that first job for new teachers. It also can be used for experienced teachers moving from one system to another. Problems of adjustment, which usually result in a certain amount of lost motion in the classroom, can be solved if sufficient time is available under proper conditions.

As many uses for an extended school year exist as there are problems in our school systems, which only time can help to solve. The teaching profession must inform the public it serves that the "midnight oil" supply is running low and the night hours are too few to do all that is necessary to teach boys and girls as they should be taught. The extended school year for teachers to plan and prepare for improved teaching-learning situations offers one immediate answer.

THE OVERHEAD PROJECTOR: A CHALLENGE TO INVENTIVE TEACHERS

BY JERROLD E. KEMP* AND RICHARD B. LEWIS**

Teaching and learning need never be dull. Through a rich variety of books, displays, pictures, films, tape recordings, and a growing quantity of new devices made possible through our expanding technology, day-by-day experiences of students can be vitalized.

The overhead transparency projector is one relatively new device, widely used by business, industry, and military groups for training, that as yet is not widely adopted by teachers. However, the "overhead" offers substantial opportunities for a teacher with imagination—and with a concern for effective presentation of course content.

The machine is used in a lighted room and is operated by the teacher as he faces his class. Correlation of visual with oral presentation is completely controlled by the teacher. Pictorial, diagrammatic, and written material may be projected with color for emphasis or symbolic meaning, if desired. Even motion can be stimulated by means of light polarizing materials. A variety of techniques makes possible sequential exposure of concepts, additive combinations of symbols in proper order, and visual indicators to guide the viewing students.

An enterprising teacher can prepare various types of materials for the projector; the preparation of some requires no special skill, but for others, some technical knowledge that is within the ability of any teacher is very useful; only a few materials will require advanced photographic or mechanical skills. Typing or writing will produce simple transparencies; the addition of sketches or line drawings, and the use of an ammonia process, will produce materials on foil with added impact and in color. One recently developed, simple process permits one to "lift" pictures in full color

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from magazines for projection in the classroom. And the use of colored inks, cut-outs of colored cellophane, and more advanced photographic techniques permit the preparation of elaborate materials.

While the process of preparing materials for the overhead projector may seem time-consuming, this investment of time and talent can improve instruction, and ultimately save time. Materials once prepared can be used repeatedly, as long as they are timely or appropriate. Further, materials prepared for the projector may eliminate rewriting chalkboard presentations. And, a point not to be overlooked, the skillful teacher soon realizes that the process of planning and preparing effective visualizations for a lesson clarifies his teaching in terms of lesson objectives and points to be stressed.

Using the Overhead Projector

Used in the front of the classroom, six to eight feet from the screen, the overhead projector gives a four to five foot picture. If the class is large, a much larger picture is feasible, even with a moderate light level in the room. The teacher operates the projector himself, thus controlling the pace of the lesson, and at the same time maintaining visual contact with the class.

In front of the teacher is an illuminated, horizontal, flat surface which holds each large slide, or *transparency*, which measures from 7″x7″ to 10″x10″, depending upon the model of the projector. This size permits comfortable writing and drawing directly upon the transparency, or pointing to features on it. The horizontal stage also permits the teacher to manipulate the transparencies, covering parts or uncovering other areas to focus class attention on specific points. It is possible to develop concepts or show complex processes by adding transparent *overlays*, step-by-step, to a basic diagram.

Thus, with the overhead projector, the teacher has command of many psychological advantages of visual presentation through which student interest and active participation can be realized. Comprehension can be accelerated. Class time can be saved.

Teaching with the Overhead Projector

As use of this projector increases, it becomes more and more apparent that there are benefits to be derived from its use in any subject area. Most types of presentations, such as developing complex concepts, presenting factual information, developing outlines, and testing can be made with transparencies and the overhead projector.

In geometry and trigonometry, student comprehension of two- and three-dimensional diagrams can be aided by carefully prepared transparencies involving color and separate overlays. Geometric theorems and complicated problems can be separated into single components and presented systematically. In science and other technical courses on all levels,

the study of cycles, processes, diagrams, and structures provides natural materials for overhead projection and many topics can be made clear through the creative use of a variety of techniques. Three-dimensional plastic objects like rules and compasses can be shown to a group and discussed. Also, operable plastic mechanisms can be constructed and used to show motion and relationships of moving parts.

In English, individual student composition work can be transferred to acetate and discussed by the whole class when projected. The reference by Bissex tells of uses being made of the overhead projector in large-group English instruction.

In social studies, maps and other geographical studies may be improved by materials displayed on the overhead projector. In commercial courses, such as bookkeeping and accounting, great blocks of class time can be saved by preparing business forms and problem solutions on transparencies prior to class; these, too, can be used repeatedly to eliminate time-consuming chalkboard work. In physical education and team training, plays may be analyzed through moving symbols to simulate reality.

School administrators find that presentations to school boards and to the public can be made convincing and clear through appropriate, inexpensive, and attractive visuals presented on the overhead; statistical and other often complex information can be understood and appreciated by an audience if colorfully and effectively projected.

The overhead projector opens new opportunities for imagination and ingenuity in the search for more effective and more efficient teaching techniques; it has been well demonstrated by others that student learning can be improved and accelerated. Is not this in the direction of the constructive use of teachers' talents?

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Ozalid Division, General Analine & Film Corp., 933 Harrison Street, San Francisco, California.

Photo & Sound Company, 116 Natoma Street, San Francisco 5, California.

Tecnifax Corporation, 1485 Bayshore Boulevard, San Francisco, California.

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MECHANICAL ASSISTANCE FOR GROUP GUIDANCE IN SOUTH BEND, INDIANA

BY KENNETH W. REBER*

The experimental project in South Bend is oriented to a better utilization of the time and talents of school counselors and teacher personnel in the guidance program through the development and use of radio broadcasts and tape recordings. The project, now in its second year, is carried on under the auspices of the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School, a commission of the National Association of Secondary School Principals.

The guidance program in South Bend is made up of five related services. These are commonly referred to as individual inventory, information services, counseling, placement, and follow-up and research. These are not, of course, distinct and separate services and are not necessarily services rendered exclusively by guidance specialists. Although experience has shown that some parts of the guidance program require the services of specialized personnel, the success of the total guidance program requires the cooperative efforts of all employees in the school; and participation in the program by classroom teachers is both desirable and necessary. It is not unusual, then, to find homeroom teachers—who are not guidance specialists—helping to maintain cumulative records, administering the standardized testing program, helping students with election cards, and helping them with minor personal and social problems. At the same time, guidance specialists are available to coordinate the guidance program and to carry out more specialized services, particularly in the areas of counseling and information services.

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Students in the four senior high schools are scheduled into a half-hour homeroom period each morning. Many of the homeroom activities are in the group guidance area. Three types of activities are used: listening to a radio broadcast of tape recordings prepared specially for their grade level; large or special group meetings participating in a program developed by the school counselors; and activities in their homerooms which have been developed cooperatively by the grade-level counselors and the homeroom teachers. The unique part of the program is, of course, the radio broadcasts. Each school has a two-channel, central sound system so that programs can be transmitted to two different grade levels at the same time, one by radio and one by tape recording. The school system owns and operates its own FM station.

Prior to the use of radio in the guidance program, occupational, educational, personal, and social information was presented to students in regularly scheduled classes, which met one period each week and which were taught by grade-level counselors. This plan took up a major portion of the counselors' time, leaving them with reduced time for coordinating the guidance program and for individual counseling. The experimental program calls for a fuller participation of all staff members in the guidance program. The radio broadcasts are developed by trained guidance workers and their consultants, thus assuring that the information is current and appropriate.

The use of resource personnel in the preparation of radio broadcasts and tape recordings is a major feature of the experimental project. There are, of course, numerous specialists in any school system, in addition to those in the community. Teachers, counselors, supervisory and administrative personnel, and community specialists all contribute to the guidance effort.

The cost of operating such a program, when borne by the school system, does not appear to be prohibitive and may be somewhat less than if additional counselors were employed to teach group guidance classes. The large-group meetings lend themselves to the use of other electronic aids such as films, tape-slide series, and closed-circuit television. It is expected that the tape recordings will be usable for a five-year period with minor revisions.

As a result of this experimental project, it appears that:

1. Specialized functions of guidance services have been placed in the hands of trained guidance workers, but the base has been broadened to include more staff in the total program.
2. Counselors have more time for individual counseling and for coordinating the guidance services in the schools.
3. Adequate resources are now available to all students for help in

planning their programs and in solving their personal and social problems.

4. There is a more formal, analytical approach to the presentation of guidance information, and the various parts of the guidance program are easier to articulate and defend.
5. There is more opportunity to utilize the services of resource personnel in the guidance program, resulting in an enriched program.
6. The development of better facilities, equipment, and materials for the guidance program has been encouraged.
7. Experience and incentive to carry on other experimental programs related to a better utilization of staff time have been provided.
8. There is a greater understanding and appreciation of the guidance function among students and staff personnel.

Various evaluative techniques have been developed for the experimental project, most of which are as yet incomplete. The guidance program is evaluated in terms of improved student behavior. In other words, the students make better educational plans, plan careers more wisely, are better adjusted, more confident, more secure, make better use of time and talents, make satisfactory personal and social growth, and make satisfactory progress during their high school careers and after they leave. It is not easy to measure these changes objectively, particularly on a short-range basis, but the prospect is promising.

THE DROP-OUT PROBLEM

The U.S. Labor Department has been studying the job fortunes of 10,000 boys and girls who dropped out of high school before graduating; and of 12,000 who graduated from high school but who did not go on to college.

Government labor analysts, aided by local school people, studied these school leavers in seven different parts of the country.

Looking first at the 10,000 drop-outs, the Labor Department found that more than a fourth of them quit school "because of adverse school experiences." This was as true of girls as of boys. Other reasons for leaving school were military service and the necessity to go to work, for boys; marriage, for girls.

Says the Labor Department: "Dissatisfaction with school—adverse school experience—was the single most important rationalization for leaving school. In interviews with these boys and girls, comparatively few expressed any opinion on how school could have been more useful. Among those who did, however, about a third of the boys and about half the girls asked for more vocational counseling. 'A better curriculum' and 'better teachers' were among the more preponderant suggestions."

—Education Digest, December 1959

THE USE OF TELEVISION AS AN AID TO CONSTRUCTIVE USE OF TEACHERS' TALENTS

BY JOE HALL*

Television seems to offer an opportunity for schools to build better instructional programs by providing ways for teachers of different interests and skills to utilize fully their professional talents. To understand why this is true, it is necessary to look at the instructional team members who present and utilize the telelessons. They are the on-camera (studio) teacher, the production director for the telelesson, and the classroom teachers who employ the telelesson as a major resource in teaching boys and girls.

When school faculties are asked to help select studio teachers they usually suggest the name of one or more enthusiastic colleagues who communicate a great amount of this enthusiasm. The teachers nominated often have a personal magnetism which threads through their classroom teaching and encourages children to build ideas and attitudes. Such teachers are a little on the colorful side—unforgettable! When subject matter is involved they create in the child curiosity and abiding interest. They inspire! Now, if this type of teacher also has the mundane ability to organize materials and meet scripting and guide-sheet deadlines, he may be the man to put before the camera. He may be the person because, in addition to the talents already mentioned, teachers at the National Television Workshop (Chapel Hill, 1959) said that the candidate for the studio position should "have a thorough knowledge of subject matter, ability to work with other people and take criticism, a good command of the English language, training in the use of visual aids, creativity and imagination, and good health and stamina"!

Does such a paragon of virtue and talent exist? Perhaps not, but all

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of us know teachers who have many of these talents. After observing such a teacher we usually shake our heads in admiration and remark that it would be wonderful if every boy and girl could have such a teacher. Technology is now tapping us on the shoulder and indicating a way in which such a teacher can be shared with hundreds, perhaps thousands of our students. If such teachers can be identified and selected for the studio teaching job, they will enjoy the satisfaction of contributing beyond their fondest hopes to more boys and girls in one year than they could reach in a lifetime of classroom teaching.

A second member of this talented team is the producer-director. The producer-director is one of the most unique educational engineers to enter our profession. On his shoulders rests a good portion of the responsibility for the teaching impact of the telelesson. He is a working partner of the studio teacher. In addition to calling the camera shots for the teacher while he is on the air, the producer-director must have had prior conferences with the teacher about the right visuals, proper timing, movement, and every aspect pertinent to the techniques of presentation. While it is up to the teacher to choose the purpose and content of the lesson, he relies upon the director to advise him and plan the most effective method and techniques for presentation of the lesson. The producer-director, of course, is in full technical charge of the studio while the lesson is on the air. The producer-director should have an unusually good sense of timing, and should be able to visualize and create situations which exploit the medium to the fullest for the effective teaching of boys and girls. He must have the judgment to distinguish between that which is frothy showmanship and that which is good teaching. As the importance of this position emerges in the field of education, educators are becoming more concerned about the professional preparation and background desirable for this position. Perhaps the majority of the present producer-directors in educational television have come from commercial stations. They have adapted well to educational television. Many of the good techniques of commercial television are useful in school television. However, most administrators applaud the efforts of certain universities that are urging a course of study to prepare men and women for this position. After they have completed the proposed course of study they will have a major in television production and minors in professional education and the subject area in which they choose to direct. A second solution may be for teachers who have outstanding talents for dramatic production and speech coaching to obtain additional training in television production. Commercial directors interested in educational television are finding it helpful to gain experience and professional training in education.

The third member of the TV teaching team is the classroom teacher. Secondary-classroom teachers who utilize television as a major resource

often have a class period of one hour—one half of which is devoted to television and the other half to the classroom portion of the lesson. No matter what size the class or what the subject matter, the TV classroom needs the talents of the teacher who can organize. The TV classroom teacher must have the vision to conceive the telelesson and activities of the classroom portion of the period as an integral lesson with a single, common purpose. It now appears that the degree of success of an educational television project depends in a large measure upon the talents of teachers who can utilize the telelesson to an advantage. This means that the television classroom teacher must be able to identify the weaknesses of the telecast and reinforce them. He must be able to recognize the strengths and high interest points of the lesson and capitalize upon them. He must be able to extend and apply and take new approaches consistent with the telelesson. No matter how stimulating and engaging the telecast has been, the boys and girls have a limited attention span and usually are ready for active and personal participation during the classroom portion of the lesson. The classroom TV teacher then must draw upon his talents to plan, organize, and elicit widespread and meaningful student participation. Cooperation and teamwork must also be among his talents. Certainly there are many teachers who enjoy the feeling of being a part of the team in the role of classroom television teacher. To identify and involve these teachers in this capacity is a constructive use of their talents.

A number of the nation's large school systems are making use of television at the elementary level with an organization known as the Stoddard Plan.[1] Basically, this plan calls for teaching certain special subjects with the help of television in large groups, and permits smaller than normal classes (twenty-five and under) in non-TV groups with a single teacher for the skills of reading, writing, and arithmetic. Since the talents of the teacher of the television room have already been discussed, it seems in order to mention the teacher talents which may be utilized in the specialized skills groups which television permits. Here the teacher who enjoys working on the fundamentals in small groups is in her element. Since the special subjects are taught in other areas with the help of television, she is free to concentrate in an uninterrupted period on the fundamental skills. Among our elementary teachers there are many who have had a preponderance of training in these areas. If their talents and specialized training in these areas can be used in small groups, there is definite promise that improved learning situations will develop.

The proper utilization of teacher talent has always been a challenge to our school systems. If television can help us to meet this challenge, we may take a long step forward in the quality of American education.

[1] Stoddard, Alexander J. *Schools for Tomorrow: An Educator's Blueprint.* New York: The Fund for the Advancement of Education, 1957. 62 pp.

USING SUPERIOR TEACHERS IN SUMMER SCHOOL

BY FRANK L. LUCAS*

San Rafael City Schools have developed a summer school for the community in an attempt to offer a special educational experience for students, young and old. The tools are sharp, the skill of the teachers superior, and the environment conducive to learning. The school building, otherwise vacant, is put to additional use. The teachers, instead of seeking part-time, outside employment are working at what they like best and for which they are most competent—teaching.

In addition to the many superior teachers on our staff who participate in our summer school program in San Rafael, we also invite outstanding instructors from other districts as "visiting professors" to join our summer school staff. Visiting staff lend prestige and bring different ideas for teaching techniques into our district. Conversely, they gain from the contact with our own staff.

The group of lay-professional people who first sat down to plan our summer educational program examined carefully the purposes it might serve. After analyzing the needs of students in grades four through twelve who might attend, it was decided to offer four types of programs: remedial work, special educational opportunities, seminars, and a lecture series.

The remedial program was designed for students needing corrective work in several fields. Arithmetic and reading were the most obvious areas, but courses in formal grammar, foreign language, and mathematics were also included for students having difficulty in these areas.

The "special educational opportunities" courses were established for students wishing to explore new fields or develop skills which they were unable to work into their program in the regular school year. In this group were placed such courses as "personal" typing, arts, crafts (ceramics), music (vocal and instrumental), industrial arts, drama, sewing, driver

* City Superintendent of Schools, San Rafael, California.

education, and an unconventional course called "An Introduction to Math" for students contemplating enrolling in algebra.

The seminars in government, science, and fine arts were daily four-hour sessions which integrated the subject of English and speech with special field studies. The program was designed for more capable students and combined research, discussion, and composition into a single course. It proved to be an exciting experience for students, teachers, and parents.

The lecture series was designed to provide students going to college with an opportunity to study in the manner typical of so many college courses. Special emphasis was placed on note taking, study, and examinations unique to this educational process. This has been less successful than the other three programs.

The students, generally, seem to radiate an eagerness to learn. They are impatient with everything that distracts them from their study, and there is a strong loyalty to the teacher that seems to propel the experience toward a successful conclusion. The teacher, on the other hand, stimulated by the attitude of the students, responds to the group with superior preparation and leadership, thus motivating students to greater performance. This has been especially true in the seminar-type courses (without academic credit) in which student and teacher are permitted to leave the conventional classroom—where textbooks, courses of study, credit, and grades play such a dominant role—and explore, without limit, the area under study. Even in courses described as "brush-up" courses every effort has been made to bring the willing student and the superior teacher together.

In the field of science, for example, where students in grades eight, nine, ten, and nine, ten, eleven may be found in a single class, the entire science facility—physics, chemistry, life science, photography laboratory—is turned over to the instructor who then operates the class as one might operate a research laboratory. The student is able to penetrate in depth a science problem in which he already has an interest. On the other hand, the student may join in group research. The result is greater interest and greater depth of study.

During the past summer over one thousand students and forty-six instructors participated in the program. The students came from twenty-six different schools in addition to our own district. Parent and student evaluations were gratifying and constructive, and recommendations for improvement were offered.

We see the summer school as an opportunity to offer something educationally unique to students on a voluntary basis by highly competent staff. The educational facilities of the school district are put to greater use; faculty members who wish to seek additional income can do this while using their greatest talent—the ability to teach.

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